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GenCore version 5.1.6
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OM protein - protein search, using sw model	September 11, 2005, 01:19:58 ; Search time 258 Seconds (without alignments) 269.833 Million cell updates/sec	US-09-529-206E-4 re: 959 1 MQAEGRGIGGSIGDADGPGGWIIQCFLPVFLAQPPSGQRR 180	.e: BLOSUM62 Gapop 10.0, Gapext 0.5
OM protein -	Run on:	Title: Perfect score: Sequence:	Scoring table:

2105692 Total number of hits satisfying chosen parameters:

2105692 segs, 386760381 residues

Searched:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0 Maximum DB seq length: 200000000

A_Geneseq_16Dec04:*
1: geneseq11980s:*
2: geneseq11990s:*
3: geneseq2000s:*
4: geneseq2001s:*
5: geneseq2003s:*
6: geneseq2003s:*
7: geneseq2003as:*
8: geneseq2003as:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Aaw62584 Cancer as	Aaw69665 Human NY-	Aay05965 Human can	Aay52430 Human tum	Aay70862 Human tum	Aab03154 Human oes	Aab69946 Human NY-	Aag67164 Amino aci	Aau01535 Human NY-	Aae07714 Human NY	Aau84818 Human NYN	Aaul1543 Human tum	Abr58672 Human can	Abr48210 Human bla	Abu56508 Lung canc	Abu56694 Lung canc		Abr83438 Human NY-	Adc09576 NY-ESO-1	Add35568 Human NY-	Add25510 Binding d	Adn39068 Cancer/an	Adj54139 Human NY-	Adm72815 Human NY-	Adq18451 Human sof
ID	AAW62584	AAW69665	AAY05965	AAY52430	AAY70862	AAB03154	AAB69946	AAG67164	AAU01535	AAE07714	AAU84818	AAU11543	ABR58672	ABR48210	ABUS6508	ABU56694	ABP74198	ABR83438	ADC09576	ADD35568	ADD25510	ADN3 9068	ADJ54139	ADM72815	ADQ18451
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New isolated cancer associated antigen - is used to develop products for the diagnosis and treatment of cancers and for monitoring cancer therapy.

Adg10446 Autoimmun	Aae13122 NY-ESO-IC	Abu64816 Human NY-	Adm73418 CAG-3 pro	Human	Adk68648 Epitope l	_	Abp74199 Human LAG	Adc09577 LAGE-1a p	Adm72816 Human LAG	Aaw69664 Human LAG	Aay70860 Human LAG	Aau84820 Human LAG	Abb78346 Amino aci	Adc35103 Human bre	Adr66117 Human pro	Adr66459 Human pro	Adm73419 LAGE-1a p	Adm73424 Consensus	Adm73420 LAGE-18 p
ADQ10446	AAE13122	ABU64816	ADM73418	ADM73417	ADK68648	ADD35564	ABP74199	ADC09577	ADM72816	AAW69664	AAY70860	AAU84820	ABB78346	ADC35103	ADR66117	ADR66459	ADM73419	ADM73424	ADM73420
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959	959	953	950	950	934.5	918	821	821	821	814	814	814	814	814	814	814	813	808.5	908
26	27	28	53	30	31	32	33	34	32	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

AAW62584; 17-SEP-1998 (first entry) Cancer associated antigen NY-ESO-1. Cancer associated antigen NY-ESO-1. Cancer associated antigen, NY-ESO-1; regression; progression; cancer; treatment; diagnosis. Homo sapiens. Key Misc-difference 7 Misc-difference 9 Misc-difference 9 Misc-difference 11 Misc-difference 13 Misc-difference 134 Misc-difference 136 Misc-difference 137 Misc-difference 137 Misc-difference 138 Misc-difference 139 Misc-difference 130 Mi	AAA	ein; iso AM.		
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Cancer associated antigen; NY-ESO-1; recancer; treatment; diagnosis. Howo sapiens. Key Misc-difference 7 Mote= "potential myris Misc-difference 11 Misc-difference 13 Misc-difference 134 Misc-difference 138 Misc-difference 138 Misc-difference 138 Misc-difference 138 Misc-difference 134 Misc-difference 138 Misc-difference 13	Cancer associated	en NY-ESO-1.		
Cancer; treatment; diagnosis. Homo sapiens. Key Misc-difference 7 Misc-difference 7 Misc-difference 10 Misc-difference 11 Misc-difference 134 Misc-difference 134 Misc-difference 134 Misc-difference 134 Mote= "potential phosp Mote-1998, and 135. 15-SEP-1997; 97WO-US016335. 15-SEP-1997; 97WO-US016335. CLUDM-) LUDWIG INST CANCER RES. CLUDM-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Driffhout JW; Driffhout JW; WPI; 1998-286417/25. New isolated cancer associated antigen New isolated cancer associated antigen	Cancer associated			rogression; onset;
Homo sapiens. Key Misc-difference 7 Misc-difference 7 Misc-difference 9 Misc-difference 10 Misc-difference 11 Misc-difference 11 Misc-difference 13 Misc-difference 138 Misc-difference 1	cancer; treatment;			
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Misc-difference 98 Misc-difference 134 Misc-difference 138 Misc-difference 138 Moy814464-A1. 09-APR-1998. 15-SEP-1997; 97WO-US016335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI: 1998-286417/25. N-PSDB; AAV38566. New isolated cancer associated antigen	/			site"
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Misc-difference 138 /note= "potential phosp W09814464-A1. 09-APR-1998. 15-SEP-1997; 97WO-US016335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI: 1998-286417/25. N-PSDB; AAV38566.	/ Misc-difference 1			site"
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WO9814464-A1. 09-APR-1998. 15-SEP-1997; 97WO-US016335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI: 1998-286417/25. N-PSDB; AAV38566.	Misc-difference			gite"
MO9814464-A1. 09-APR-1998. 15-SEP-1997; 97WO-US016335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI: 1998-286417/25. N-PSDB; AAV38566.	•))
09-APR-1998. 15-SEP-1997; 97WO-US016335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI: 1998-286417/25. N-PSDB; AAV38566.				
15-SEP-1997; 97WO-USO16335. 03-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI; 1998-286417/25. N-PSDB; AAV38566. New isolated cancer associated antigen				
O3-OCT-1996; 96US-00725182. (LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI; 1998-286417/25. N-PSDB; AAV38566.	15-SEP-1997;	16335.		
(LUDW-) LUDWIG INST CANCER RES. Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI; 1998-286417/25. N-PSDB; AAV38566.	03-OCT-1996;	25182.		
Chen Y, Scanlan M, Gure A, Old LJ, Drijfhout JW; WPI; 1998-286417/25. N-PSDB; AAV38566.	(LUDW-) LUDWIG INST	CER RES.		
WPI; 1998-286417/25. N-PSDB; AAV38566. New isolated cancer associated antigen	Chen Y, Scanlan M, Drijfhout JW;		, В	nuth A;
New isolated cancer associated antigen				
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Claim 4; Fig 3A; 88pp; English.
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                                          from which the DNA sequence is obtained is designated NY-ESO-1. The specification described a method for determining regression, progression of onset of a carnerous condition, comprishing monitoring a sample from a patient with the cancerous condition for a parameter selected from NY-ESO-1 protein, a peptide derived from NY-ESO-1 protein and cytolytic T cells specific for the peptide and an MHC molecule with which it non-covalently complexes Methods for the treatment of a cancerous condition are also described. The NY-ESO-1 protein and peptides derived from it can be used for diagnosis and treatment of cancers and to monitor the efficacy of a
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 Claim 8; Fig 3; 49pp; English.
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expression product, comprising administering to the subject autologous cytolytic T cells to ameliozate the disorder, where the cytolytic T cells are specific for complexes of an HLA molecule and a LAGE-1 TAP or an immunogenic fragment; (2) a method for treating a subject with a disorder characterised by expression of a LAGE-1 mucleic acid molecule or an expression product, comprising administering a LAGE-1 TAP or an immunogenic fragment to ameliozate the disorder; and (3) a method for selectively enriching a population of T cells with cytolytic T cells specific for a LAGE-1 TAP comprising contacting an isolated population of T cells with an agent presenting a complex of a LAGE TAP or an immunogenic fragment and a HLA presenting molecule to selectively enrich the isolated population of T cells with the cytolytic T cells. The methods and products from the present invention can be used for the diagnosis and treatment of LAGE-1 associated disorders, particularly
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100.0%; Pred. No. 5.2e-79;
iive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1999-277270/23.
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The present sequence represents the ORF1 protein encoded by open reading frame 1 of the human ESO-1/CAG-3 (or CAG-3) gene. CAG-3 is a new and content tumour antigen capable of eliciting an antigen specific immune response by T cells. Cancer peptides comprising ORF1, ORF2 (see AAY05966), portions of these peptides and their variants (see AAY05965-37) are useful as cancer vaccines that protect the recipient from development of cancer. The invention provides: vectors and host cells (also useful as vaccines); a method of diagnosis of cancer or precancer; a transgenic animal; antisense oligonucleotides that inhibit expression of the cancer peptide or tumour antigen; antibodies reacting with the CAG-3 cancer peptide, useful in diagnostic and detection assays; and methods of the cancer peptide. Useful in diagnostic and detection assays; and methods of the with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lung cancer, liver cancer, leukaemia, uterine cancer, lymphoma, asrcoma, lung cancer, liver cancer, leukaemia, uterine cancer, lymphoma, asrcoma, lung cancer, liver cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by inducing cancer-specific T cells in vitro for subsequent
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/note= "Peptide presented by MHC Class I HLA-B7, HLA-B8
and HLA-B35"
                                                                                                                                                                                                                                                                                                                                                                                    PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
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                                                                                                                                                                                                                                                                                                                                   MOAEGRGTGGSTGDADGPGGPGI PDGPGGNAGGPGEAGATGGRGPRGAGARASGPGGGA
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100.0%; Pred. No. 5.2e-79;
ive 0; Mismatches 0;
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.e= "Peptide presented by
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/note= "Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human tumour antigen NY-ESO-1.
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                                                                                                                                                                                                                                                                                                           Conservative
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/note=
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Best Local Similarity
Matches 180; Conserv
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Unidentified
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HLA-A24 and HLA-
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                                                                   Class I HLA-B7, HLA-B8
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                                           Class I HLA-B44"
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Mote= "Peptide presented by MHC Class I HLA-A3"
159. .167
Mote= "Peptide presented by MHC Class I HLA-A3"
"Peptide presented by MHC Class I HLA-Al"
                                                                                                     Class I HLA-A1"
                                                                                                                                                                                                                                                                                                       by MHC Class I HLA-B7"
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.e= "Peptide presented by MHC Class I
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a= "Peptide presented by MHC
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.a= "Peptide F
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-e= "Peptide F
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/note= "Peptide
and HLA-B35"
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/note= "r._
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/note= "F
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/note= "Pe
154. .163
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115. .124
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Gure A, Ritter
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RESULT 6
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                                                                                                                             This sequence represents a human tumour antigen, NY-ESO-1, the CDNA encoding which was isolated from an oesophagus squamous cell cancer CDNA library. Tissue localisation studies revealed it to be expressed at high levels in normal ovary and testis but not in normal colon, kidney, liver, tumour cell library library and skin. It was expressed in certain tumours and tumour tumours and brash and cell lines, and brash and bladder cancer specimens, with expression in other tumour types being sporadic. Peptides derived from NY-ESO-1 are bound by both MRC (major histocompatibility complex) Class I and Class II molecules for presentation to T-cells. Peptides AAV52431- Y52444 bind to Class I HLA-A2 molecules, thereby stimulating particles and class II HLA-DR53 molecules, while peptides AAV52435-Y52440 bind to Class II HLA-DR53 molecules, stimulating helper T-cell proliferation. The peptides derived from NY-ESO-1 may be used in methods and complete and prevention of cancers and prevention by the conters and prevention where the conters are also and prevention of cancers and prevention of cancers and prevention where the conters are also and cancers and prevention of cancers and prevention of cancers and prevention of cancers and prevention of cancers and prevention and cancers and 
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                                                                                                                                                                                                                                                                                                                                                                                                                              (such as melanoma, breast cancer, prostate cancer, lung cancer, hepatoma, ovarian cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the proliferation of T cells
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Revised record issued on 21-OCT-2004 : Correction to feature table key
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                                   Novel peptides which bind to MHC class I and MHC class II molecules, useful for therapeutic and diagnostic purposes.
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                                                                                              Claim 30; Fig 3; 49pp; English.
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The present sequence is the human NY-ESO-1 protein, a tumour antigen, identified by screening an esophagus carcinoma cDNA library. This protein is derived from open reading frame (ORF)-1 that contain epitopes of tumour specific T-cells. NY-ESO-1 is expressed in different tumour types, but not in healthy tissues except in testis. It also shows homology with the CAMEL (Cytotoxic T lymphocytes (CTL)-recognised Antigen on MELAnoma) protein, a tumour-associated antigen. The tumour-associated antigen and displayed on melanoma cells is recognised by cytotoxic T lymphocytes. This sequence has anticancer activity. CAMEL tumour antigen and immunogenic peptides derived from it are useful for cancer immunotherapy. They have the potential to induce an immune response, by eliciting a CTL response. The DNA molecule is used for the construction of recombinant or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 PRGPHGGAASGLNGCCRCGARGPESRILEFYLAMPFATPWEAELARRSLAQDAPPLPVPG 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 959; DB 3;
100.0%; Pred. No. 5.2e-79;
ive 0; Mismatches 0;
Klade C;
Schrier PI, Aarnoudse CA, Heider K,
                                                                                                                                                                                                                                                            Example 3; Page 62-63; 73pp; English.
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                                                                WPI; 2000-339685/29.
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                                                                                               N-PSDB; AAD00152
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The present sequence is human NY-ESO-1 protein. It is provided in a specification relating to a method for determining the status of a cancerous condition in a patient with a tumour that expresses NY-ESO-1. The method comprises assaying a sample taken from the patient for antibodies that specifically bind to the NY-ESO-1 and comparing the value betained from assay of a prior sample taken from the patient. Any difference between the values is indicative of a change in status of the cancerous condition. The method is useful for determining whether a cancerous condition is progressing or remaining stable, in particular in patients receiving treatment for a melanoma, adenocarcinoma, non-small cell lung carcinoma or bladder
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Method useful for determining the status (e.g. progression, regression or stability of the disease) of a cancerous condition, involves determining the levels of NY-ESO-1 specific antibodies in a sample taken from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen;
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  cytotoxic T cell; carcinoma;
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                                                                                                                                                                                                                                                                                                                                                                                                                             Scanlan M;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 180;
Human; NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotox
HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcino
non-small cell lung carcinoma; tumour status determination.
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Pred. No. 5.2e-79;
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                                                                                                                                                                                                                                                                                                                                                         CANCER RES
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                                                                                                                                                                                                                                                                                                                              (LUDW-) LUDWIG INST CANCER RES
                                                                                                                                                                                                                                                                                                                                                                            (CORR ) CORNELL RES FOUND INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                          Jager E, Stockert E,
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N-PSDB; AAF58634.
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                                                                                                 Homo sapiens
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AAG67164
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence represents a human oesophageal cancer-associated antigen, NY-ESO-1. The CDNA encoding this sequence was isolated from a CDNA ilbrary prepared from a specimen of well-to-moderately differentiated squamous cell cancer of the oesophagus. Expression analysis demonstrated that NY-ESO-1 was expressed in oesophagus. Expression analysis demonstrated that NY-ESO-1 was expressed in oesophagus. Expression analysis demonstrated that NY-ESO-1 was expressed in oesophagus. Expression analysis demonstrated that NY-ESO-1 was expressed in oesophagus carcinoma, certain melanoma cell lines and in normal ovary and testis tissue, but not in normal colon, kidney, liver or brain tissue. Analysis of the amino acid sequence of the protein indicates that the protein has a transmembrane domain, several N-myristoylation sites and O-phosphorylation sites and that it contigen is useful as an immunogen when combined with an adjuvant, in both precursor and post- translationally modified forms, and may be used to generate anti-NY-ESO-1 antibodies. It can also be used as a diagnostic marker for oesophageal cancer, and can be utilised as a marker for the targetted delivery of therapeutic agents to oesophageal cancer.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New isolated esophageal cancer-associated antigen useful as markers for producing antibodies and as targets for identifying abnormal conditions,
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152. .172
/note= "Potential transmembrane domain"
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                                                                                                                                                                                                                                                                                                                                                    Chen Y, Tureci O,
                                                                                                                                                                                                                                                     (SLOK ) SLOAN KETTERING INST CANCER RES. (CORR ) CORNELL RES FOUND INC. (LUDW-) LUDWIG INST CANCER RES.
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Matches 180; Conservative
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                                                                                                                                                                                                                                                                                                                                                    Gure AO,
                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 2000-410880/35.
                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; AAA61483.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 180 AA;
                                                                                                                                                             26-JAN-1998;
                                                                                                                                                                                                            03-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27-APR-2001
                                                                    US6069233-A
                                                                                                               30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                 Scanlan M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61
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Domain
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/note= "Phosphorylated" 138 /note= "Phosphorylated"

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'note= "Myristoylated"

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WO200123560-A2
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                                                                                                                                                                   29-SEP-1999;
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                                                                                                                                                                                                         Pureci O,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II; major histocompatibility complex, helper T cell; HLA-DR; cancer; muman leukocyte antigen-determining region; disease progression; disease onset; body tissue; body fluid; enzyme label; radioactive label; monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                             The present sequence represents cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to Class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours
                                                                                                                                                                                                                                                                                                                                                                                                       9
 peptide; major histocompatibility complex; MHC; tumour;
                                                                                                                                                                                             pmic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful diagnosing testicular tumors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGBAGATGGRGPRGAGAARASGPGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                           PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
                                                                                                                                                                                                                                                                                                                                                                                                                                      PRGPHGGAASGLNGCCRCGARGPESRILIEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
                                                                                                                                                                                                                                                                                                                                                                                     1 MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
                                                                                                                                                                                                                                                                                                                                                                  Gaps
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0
                                                                                                                                                                                                                                                                                                                                              Score 959; DB 4; Length 180; Pred. No. 5.2e-79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human NY-ESO-1 tumour rejection antigen precursor protein.
                                                                                                                                                                                                                                                                                                                                                                 Indels
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                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAU01535 standard; protein; 180
                                                                                                                                                                                                                            English
                                                                                                                             (LUDW-) LUDWIG INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                             100.0%;
                                                                                       22-JAN-2001; 2001WO-US002126.
                                                                                                           22-FEB-2000; 2000US-00510635.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                 Boon-Falleur T;
                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                           Example 5; Fig 3; 50pp;
                                                                                                                                                                   2001-550091/61.
                                                                                                                                                                                                                                                                                                                                                        Local Similarity
HLA; HLA binding
                                                                                                                                                                           N-PSDB; AAH75118
                                                                                                                                                                                                                                                                                                                            Sequence 180 AA;
            cancer; testis
                                                 WO200162917-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Key
Modified-site
                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-JUL-2001
                                                                    30-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                 Matches 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                             61
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                                                                                                                                                 Lethe B,
                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                               Genomic
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/note= "Myristoylated"

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The sequence represents a human NY-ESO-1 tumour rejection antigen or precursor. NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major histocompatibility complex (MHC) Class II molecules such as human cleukoryte antigen-determining region (HLA-DR) molecules and stimulate proliferation of helper T cells. The peptides can be administered to an HLA-DR positive subject in order to stimulate the helper T cells. An MHC class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in free form is useful for this stimulation. The nucleic acid is useful for screening for a cancerous condition, which involves contacting a subject sample to a cell line transfected with the contacting a subject sample from a patient (for example, a body fluid or tissue) can be monitored for the amount of the complex present in the C bloodstream. This is useful for determining regression or onset of a cancerous condition. The method involves contacting the sample with a radioactive labelled or enzyme labelled monoclonal antibody which specifically binds with the complex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VLLKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                            Polypeptides binding to major histocompatibility complex class II human leukocyte antigen-determining region molecule having amino acid sequence found in tumor rejection antigen precursor used for stimulating proliferation of helper T cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MQAEGRGTGGSTGDADGPGGPG1 PDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 959; DB 4; 100.0%; Pred. No. 5.2e-79;
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                                                                                                                                                                                                 Pfreundschuh M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAE07714 standard; protein; 180 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                  (LUDW-) LUDWIG INST CANCER RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 4; Fig 3; 62pp; English
26-SEP-2000; 2000WO-US026411
                                                                  99US-00408036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
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                                                                                                                                                                                                                                                                                                N-PSDB, AAS02254.
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121 VLLKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR 180

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New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as
                                                                 Human; major histocompatibility complex; MHC; vaccine; metastasis;
class II restricted T cell epitope; MHC-II epitope; cancer antigen;
NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
tumour-specific humoral-mediated immunity; cancer; cytostatic;
                                                                                                                                                                       /note= "Encoded by CCCGGGGC"
                                                                                                                                                                                                                                                                                    (USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             target antigen and/or hapten and to mediated immunity against cancer Th
                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                 Example 1; Fig 1; 134pp; English.
                                                                                                                                                                                                                                                                                                         ΰ
                                                                                                                                                                                                                                                    28-JAN-2000; 2000US-0179004P.
29-SEP-2000; 2000US-0237107P.
                                                                                                                                                                                                                                                                                                         Zeng
                                                                                                                                                                                                                                  26-JAN-2001; 2001WO-US002765.
                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAD14179, AAD14180.
                                                                                                                                                                                                                                                                                                                                                                            protection from metastasis.
                            (first entry)
                                                ESO-1 protein.
                                                                                                                                                                                                                                                                                                         Rosenberg SA,
                                                                                                                                                                                                                                                                                                                           WPI; 2001-496851/54
                                                                                                                                                            Misc-difference 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 180 AA;
                                                                                                                                                                                          WO200155393-A2
                                                                                                            immunotherapy
                            06-NOV-2001
                                                                                                                                 Homo sapiens
                                                                                                                                                                                                             02-AUG-2001
         AAE07714;
                                                Human NY
                                                                                                                                                                                                                                                                                                        Wang R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein
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Query Match 100.
Best Local Similarity 100.
Matches 180; Conservative
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The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes of from NY ESO-1 are recognised by CD4+T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP restricted. The products of the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a manmal by eliciting CD4+T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of calls expressing the NY-ESO-1 gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the cancer peptides are also the cancer and product and/or CD8+T cell responses against any given the cancer and product and/or CD8+T cell responses against any given the cancer and products and/or CD8+T cell responses against any given the cancer and products and/or CD8+T cell responses against any given the cancer and products and/or CD8+T cell responses against any given the cancer and products and/or CD8+T cell responses against any given the cancer and products and/or CD8+T cell responses against any given the cancer and products and and/or CD8+T cell responses against any given the cancer and products and and/or CD8+T cell responses against any given the cancer and products and and/or CD8+T cell and and/or CD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ntigen and/or hapten and to induce tumour-specific humoral-
immunity against cancer. The present sequence is human NY ESO-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 100.
Matches 180; Conservative
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Best Local Similarity
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The invention relates to a new synthetic polypeptide (I) comprising several different segments of at least one parent polypeptide linked together in a different relationship relative to their linkage in the cogether in a different relationship relative to their linkage in the parent polypeptide and for inducing an immune response against a pathogen or cancer. Also included are a synthetic polypeptides and for inducing and synthetic polypeptides. The synthetic polypeptides and polynucleotides are synthetic polypeptides. The synthetic polypeptide is useful for are referred to as a Savine. The synthetic polypeptide is useful for modulating immune responses preferably directed against a pathogen or a cancer, (e.g., cancers of the lung, breast, ovary, cervix, colon, head anneck, pancreas, prostate, stomach, bladder, kidney, bone liver, oscophagus, brain, testicle, uterus), bladder, kidney, bone liver, compositions comprising the polypeptide may be used in the treatment or prophylaxis against virus), hepstitis, influenca, Japanese encephalitis, virus, agstein-Barr virus, and respiratory syncytial virus), bacterial (e.g., infections caused by Neisseria, Meningococcal, Haemophilus, Shimonella, Streptococcal, Legionella and Mycobacterium or parasitic (e.g., infections caused by Plasmodium, Schistosoma, Leishmania, Trypanosoma, Toxoplasma and Giardia) infections. The present sequence is a consensus sequence for a parent protein used to design a savine of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New synthetic polypeptides having several different segments of at least one parent polypeptide linked together differently compared to the linkage in the parent polypeptide, for inducing immune response against a pathogen or cancer.
121 VLLKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLWWITQCFLPVFLAQPPSGQRR 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                 Savine, vaccine, cancer, viral infection, HIV, hepatitis C virus, viral infection; human immunodeficieny virus; melanoma; bacterial infection; Salmonella; Legionella; parasitic infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 959; DB 5;
100.0%; Pred. No. 5.2e-79;
ive 0; Mismatches 0;
                                                                                                                      Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 3; Fig 27; 364pp; English.
                                                                                                                                                                                                                                                                                                                                                Trypanosoma; Toxoplasma; Giardia.
                                                                                                                                                                                                                                             Human NYNSOla consensus sequence.
                                                                                                                      AAU84818 standard; protein; 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25-MAY-2001; 2001WO-AU000622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26-MAY-2000; 2000AU-00007761.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (AUSU ) UNIV AUSTRALIAN NAT.
                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Thomson SA, Ramshaw IA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-147575/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200190197-A1.
                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29-NOV-2001.
                                                                                                                                                                                                      08-MAY-2002
                                                                                                                                                               AAU84818;
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WPI; 2003-354600/33.
                                                                                                                                                                                                                                                                                     Similarity
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                                                                                                                                                                                                                                             Sequence 180 AA;
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to a vaccine comprising a first housekeeping epitope derived from a first antigen associated with a first target cell. Also included are an isolated T cell expressing a T cell receptor. C also included are an isolated T cell expressing a T cell receptor an isolated T cell expressing a T cell receptor. C comprising a first housekeeping epitope which is derived from a first antigen associated with a first target cell, selecting an epitope (or peptide sequence) from a population of peptide fragments of an antigen associated with a target in a host, where the fragments have a known or predicted affinity for a MMC receptor peptide binding cleft of the host, where the epitope selected corresponds to a product of proteclytic cleavage of the antigen in a cell of the host and a nucleic acid comprises a first sequence encoding region, where the first coding region comprises a first sequence encoding at least a first polypeptide, where the first polypeptide comprises a first target cell; The epitopes derived from a first antigen associated with a first target cell; The epitopes comparises and nucleic acids are useful in the manufacture of a medicament for use in adoptive immunotherapy and for prevention and
                                                         120
                                                                                                               VILKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR 180
                                                                                                                                           180
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                                                                                                                                                                                                                                                                                                                            Human; tumour associated antigen; NY-ESO; human leukocyte antigen; major histocompatibility complex; MHC; HIA-A2.2; vaccine; cancer; HIV; human immunodeficiency virus infection; cytostatic; virucide; housekeeping epitope; adoptive immunotherapy; neoplastic disease; viral disease; hepatitis virus; papilloma virus; tumour; leukaemia; lymphoma; breast cancer; prostate cancer; lung cancer; parasitic infection; Chlamydia; Trypanosoma; Toxoplasma.
               MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
                                                         PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
                                                                        VLIKEFTVSGNILTIRLTAADHROLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR
MQAEGRGTGGSTGDADGPGGPG1 PDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel vaccine useful for treating neoplastic and viral diseases, comprises a first housekeeping epitope derived from a first antigen associated with a first target cell.
                                                                                                                                                                                                                                                                                                    Human tumour associated antigen NY-ESO.
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                                                                                                                                                                                                                  AAU11543 standard; protein; 180
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28-APR-2000; 2000US-00561571.
28-APR-2000; 2000US-00561572.
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                                                                                                                                                                                                                                                                         (first entry)
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treatment of neoplastic and viral diseases (e.g. human immunodeficiency virus, HIV, infection, hepatitis virus and papilloma virus), cancers (e.g. tumours), lenkemia, lymphoma, breast cancer, prostate cancer and lung cancer), infection of cells by intracellular parasites (e.g. the specification. The invention permits the vaccine designer to ignore peptides that, despite predicted high binding affinity for MHC, will never be useful because they cannot be presented by target cells. The invention provides a major advance in vaccine design, one that combines the power of antigen sequence analysis with the fundamental realities of immunology. The invention allows for the simple and effective selection of meaningful epitopes for creation of MHC class I or class I vaccines to meaningful epitopes for creation of MHC class I or class I vaccines consist the power of an HA-A2.1 (human leukocyte antigen) presenting tram which epitopes of the invention may be derived, where the present sequence corresponding to a desired target. The present sequence is an HLA-A2.1 (human leukocyte antigen) presenting the corresponding to a desired target. The present sequence is an HLA-A2.1 (human leukocyte antigen) presenting the corresponding to a desired target. The present sequence of the invention may be derived, where the corresponding to a desired target.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 959; DB 5;
100.0%; Pred. No. 5.2e-79;
ive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NY-ESO (a tumour associated antigen)
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13-NOV-2001; 2001US-0350666P.
08-FEB-2002; 2002US-0355145P.
08-FEB-2002; 2002US-0355257P.
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WPI; 2003-201532/19.
N-PSDB; ACC51024.
  Mack DH, Aziz N;
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                                                          The present invention describes an isolated nucleic acid molecule, which comprises the sequence of any of the genes that are up-regulated or downcegulated in specific cancers (e.g. about 1031 genes up-regulated in acute 1ymphocytic leukemia). ACC72641 to ACC72660 represent cancer related gene nucleotide sequences which encode the proteins given in ARRSB321 to ARRSB309. Also described: (1) determining the presence or absence of a pathological cell in a patient; (2) an expression vector comprising a nucleic acid molecule described above; (3) a host cell comprising the vector; (4) an isolated polypeptide, which is encoded by the nucleic acid; (5) an antibody that specifically binds the polypeptide of (4); (6) specifically targeting a compound to a pathological cell in a patient by administering to the patient the antibody above; and (7) a drug screening assay. The nucleic acid is useful for therapeutic targets. In particular, the nucleic acid is useful for therapeutic targets. In particular, the nucleic acid is useful for bancers, brain, breast, cervix, colon/rectum, kidney, lung, ovary, pancreas, prostate, skin and uterue), wounds, ischaemia, heart disease, atherosclerosis and endometriosis. The nucleic acid is also useful in a drug screening, particularly for identifying agents for treating these activities.
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            therapeutic targets for screening drugs for treating these diseases.
markers for diagnosing e.g. cancer, ischemia or heart diseases, or
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human bladder cancer associated protein sequence SEQ ID NO:139.
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                                     Claim 12; Page 757-758; 767pp; English.
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; 2001US-0343705P.
; 2001US-0350666P.
; 2002US-0372246P.
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les 180; Conserv
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Matches
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The present invention describes a method for detecting a bladder cancerassociated transcript in a cell from a patient. The method comprises contacting a biological sample from the patient with a polymucleotide that selectively hybridises to a sequence that is 80 % identical to a table of sequences (see ACC50951 to ACC51059). ACC50951 to ACC51059 cancede the human bladder cancer-associated proteins given in ABR48146 to ABR48342). Bladder cancer-associated proteins given in ABR48146 to ABR48342). Bladder cancer-associated sequences from the present invention have cytostatic activities, and can be used in antisense gene therapy and in avecaine production. The method can be used for detecting a bladder cancer-associated transcript in a cell from a patient. The method is useful in diagnosing or treating bladder cancer and in screening for compounds that moduleate bladder cancer, such as hormones or antibodies. The nucleic acid molecules from the present invention may be used in various screening and diagnostic methods, and for gene therapy, vaccine and/or antisense/inhibition applications
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100.0%; Pred. No. 5.2e-79;
ive 0; Mismatches 0;
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                                                                                                                                                                                 Claim 10; Page 278; 307pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18-APR-2001; 2001US-0284770P.
10-MAY-2001; 2001US-0290492P.
09-NOV-2001; 2001US-0339245P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-APR-2002; 2002WO-US012476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-APR-2003 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 180; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 180 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200286443-A2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
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The invention relates to a method for detecting a lung cancer-associated transcript in a cell from a patient, comprising contacting a biological sample from the patient with a polymucleotide that selectively hybridises to a sequence that is at least 80 % identical to a gene that exhibits conceased or decreased expression in lung cancer samples. Lung cancer-associated polymucleotides and polymptides are used for identifying a compound that modulates a lung cancer-associated polypeptide, for inhibiting proliferation of a lung cancer-associated cell to treat lung cancer in a patient and for treating a mammal having lung cancer by administering a modulatory compound identified. The methods are useful for treating a modulatory compound identified. The methods are useful for treating lung cancer, or other benign or precancerous leadions, e.g. atelectasis, emphysema, bronchitis, chronic obstructive pulmonary disease, fibrosis, chypersensitivity pneumonitis, intersitial pulmonary fibrosis, asthma and confounds that modulate lung cancer, such as antibodies. Sequences compounds that modulate lung cancer, such as antibodies. Sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEABLARRSLAQDAPPLPVPG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                    Detecting a lung cancer-associated transcript in a cell from a patient for treating lung cancer, by contacting a biological sample from the patient with a polynucleotide that exhibits increased or decreased expression in lung cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MQAEGRGTGGSTGDADGPGGPGTPDGPGGNAGGPGEAGATGGRGPRGAGARASGPGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 PKGPHGGAASGLNGCCRCGARGPESKLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
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100.0%; Pred. No. 5.2e-79;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                Claim 27; Page 270; 453pp; English.
                                                                                     (EOSB-) EOS BIOTECHNOLOGY INC
13-NOV-2001; 2001US-0350666P.
29-NOV-2001; 2001US-0334370P.
12-APR-2002; 2002US-0372246P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.0
Matches 180; Conservative
                                                                                                                                                                      WPI; 2003-093161/08.
N-PSDB; ABX76232.
                                                                                                                               Murray R;
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Search completed: September 11, 2005, 01:38:04 Job time : 261 secs

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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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OM protein - protein search, using sw model

September 11, 2005, 01:28:54; Search time 50.5714 Seconds (without alignments) 342.466 Million cell updates/sec Run on:

US-09-529-206E-4 959 1 MQAEGRGTGGSTGDADGPGG......WITQCFLPVFLAQPPSGQRR 180 Perfect score: Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

283416 Total number of hits satisfying chosen parameters:

283416 seqs, 96216763 residues

Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

Database

PIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

STIMMARTES

	Description	polyketide hydroxy	la costa protein -	ntic	hypothetical glyci	alp	alph		-	_	_	٨,	hypothetical prote	_		collagen alpha 1(I	collagen - chicken	hypothetical prote	probable tail comp	hypothetical glyci	hypothetical prote		glycine-rich cell	hypothetical glyci	tractin - medicina	glycine-rich prote	collagen alpha 1(x	_	_	hypothetical glyci
SUMMARIES	QI	T35608	T08435	QQBE31	B70807	CGB01S	CGH01S	D70807	F70806	T32812	H70589	T32734	T27525	T20605	S01821	CGCH1S	I50629	T21070	F85584	E70806	T24590	CGHU1E	KNMU	A70896	T18531	S19932	B31795	993	6	E70917
	DB	~	~	П	~	ч	Н	7	~	~	~	~	~	7	-	-	~	7	~	~	~	П	-	N	~	~	N	~	7	7
	Length	627	145	641	1079	779	1464	1489	1901	530	615	1215	297	299	252	1042	473	296	440	1381	290	1806	338	853	1880	228	482	1306	741	1329
	Query Match	8	è.	9	9	'n	'n.	15.7	ů.	ď.	ů.	'n.	'n	15.5	15.5	15.5	15.4	15.3	15.3	15.3	15.3	15.3	15.2	15.2	15.2	15.2	15.2	15.2	15.1	15.1
	Score	174.5	155.5	155.5	153	152.5	151.5	151	151	150.5	149.5	149.5	149	149	148.5	148.5	147.5	147	147	147	ė.	•	146	146	4	•	145.5	45.	₩.	145
	Result No.	 т	~	m	4	2	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

hypothetical prote collagen 2 - Caeno	hypothetical prote probable tail fibe	myosin heavy chain hypothetical glyci	collagen alpha i(I	hypothetical prote hypothetical glyci	collagen alpha 1(I	collagen alpha 1(I	hypothetical prote	probable tail fibe	probable tail fibe	hypothetical glyci	glycine-rich prote
T24586 B31219	T26004 D90734	MWAXIB A70893	150696	T32247 A70807	150694	CGB07S	T19142	H90854	C30769	A70869	T49893
00	01	н 0	0	0 N	N	-	~	~	~	~	~
290 301	330 438	1147	310	314 714	986	1049	323	437	439	1660	244
15.1	15.1	15.1	15.0	15.0	15.0	15.0	14.9	14.9	14.9	14.9	14.9
144.5	144.5	144.5	143.5	143.5 143.5	143.5	143.5	143	143	143	143	142.5
30	33 33	3.4	36	37	39	40	41	42	43	44	4.5

ALIGNMENTS

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polyketide hydroxylase - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: OS-Nov-1999 #text_change 09-Jul-2004
C;Date: OS-Nov-1999 #text_change 09-Jul-2004
C;Accession: T35608
R;Seeger, K.J.; Harris, D.; James, K.D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
submitted to the EMBL Data Library, June 1999
A;Reference number: Z21584
A;Reference number: Z21584
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-627 <SES
A;Cross-references: UNIPROT: P42534; EMBL:ALO79356; PIDN: CAB45603.1; GSPDB:GN00070; SCOE
C;Genetics: Scoepbs:SC669.12c
C;Superfamily: tetracycline 6-hydroxylase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 GRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGG-RGPRGAGAARASGPGGGAPRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 18.2%; Score 174.5; DB 2; Length 627; Best Local Similarity 42.7%; Pred. No. 5e-06; Matches 47; Conservative 4; Mismatches 28; Indels 31
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409 GRGTGG--PGGPGGPGGPGGPGGPGGPGGPGGPGGPGGAGGAPGGGAGG----G 462 셤

64 PHGGAASGLNGCCRCGARGPESRLLEFYLAMPF-----ATPMEAE 103 ð

RESULT 2

g

la costa protein - fruit fly (Drosophila melanogaster) C;Species: Drosophila melanogaster C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 09-Jul-2004

C; Accession: T08435
R; Maleszka, R.; de Couet, H.G.; Miklos, G.L.
Fyroc. Natl. Acad. Sci. US.A. 95, 3731-3736, 1998
A; Title: Data transferability from model organisms to human beings: insights from the f A; Reference number: Z16415; MUID: 98188272; PMID: 9520435
A; Accession: T08435
A; Cross-references: UNIPROT: 061351; EMBL: AF017777; NID: g3004652; PIDN: AAC28405.1; PID: gA; Conceins and Cantons
A; Conceins accession: T08405
A; Cross-references: FlyBase: FBgn0024251
A; Cross-references: FlyBase: FBgn0024251

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A; Molecule type: DNA
A; Residues: 1-1079 < COL>
A; Residues: 1-1079 < COL>
A; Cross-references: GB:AL022022; GB:AL123456; NID:g3261554; PIDN:CAA17749.1; PID:g292444; A; Experimental source: strain H37Rv
C; Genetics:
C; Genetics:
C; Genetics:
C; Superfamily: collagen alpha 1(1) chain; fibrillar collagen carboxyl-terminal homology.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Alsoperimental source: skin Alsoperimental source and structure of collagen: amino-acid sequence of the cyanogen-bromide Aliticle: The covalent structure of collagen: amino-acid sequence of the cyanogen-bromide Alsoperimental source: MUD:76022320; PMID:1164916
Alsoperimental source: skin Alsoperimental source
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A,Residues: 563-675 <WEN>
A,Residues: 563-675 <WEN>
A,Experimental Source: skin
R,Fistzek, P.P.; Rexrodt, F.W.; Wendt, P.; Stark, M.; Kuehn, K.
Bur. J. Biochem. 30, 163-168, 1972
A,Title: The covalent structure of collagen. Amino acid sequence of peptide alphal-CB6-(
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,Title: The covalent structure of collagen. The amino-acid sequence of the 112 residue: A,Reference number: A91201, MUID:73042276; PMID:4343808
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Experimental source: skin
R;Fietzek, P.P.; Rexrodt, F.W.; Hopper, K.E.; Kuehn, K.
Eirtzek, P.P.; Rexrodt, F.W.; Hopper, K.E.; Kuehn, K.
Eur. J. Biochem. 38, 396-400, 1973
Eur. J. Biochem. 38, 396-400, 1973
A;Tile: The covalent structure of collagen. 2. The amino-acid sequence of alphal-CB7
A;Reference number: A91211; MUID:74086118; PMID:4359390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   collagen alpha 1(I) chain - bovine (tentative sequence) (fragments)
C;Species: Bos primigenius taurus (cattle)
C;Accession: A91193; A91292; A91281; A91211; A91201; A91200; A43048; A02853
R;Rauterberg, J.; Timpl, R.; Furthmayr, H.

Bur. J. Blochen. 27, 231-237, 1972
A;Fille: Structural characterization of N-terminal antigenic determinants in calf. A;Reference number: A91193; MUID:72255334; PMID:4115172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            480 AGCTCGAGCTCGAAGDGGQGGQGGAGGAGGAGGAGGAGGTGGNGGNITGGTAGTAGAAG 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 AEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRG------AGAARASG
                                                                                                                                                                                                                                                                                                                                                                                                                                        10;
                                                                                                                                                                                                                                                                                                                                                 Length 1079;
                                                                                                                                                                                                                                                                                                                                                                                                                                   39; Indels
                                                                                                                                                                                                                                                                                                                                             Score 153; DB 2;
Pred. No. 0.00035;
2; Mismatches 39;
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A; Residues: 295-562 <F13>
A; Experimental source: skin
R; Wendt, P.; Mark, K.V.D.; Rexrodt, F.; Kuehn, K.
Bur. J. Biochem. 30, 169-183, 1972
A; Title: The covalent structure of collagen. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              540 NGGAAGKGGAGGQGGTGGGTGGQGGAGGDG 569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        56 PGGGAPR---GPHGGAASGLNGCCRCGARG 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Molecule type: protein
A;Residues: 1-19 <RAU>
A;Cross-references: UNIPROT:P02453
                                                                                                                                                                                                                                                                                                                                                 16.0%;
                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 43.3%
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nuclear antigen EBNA1 - human herpesvirus 4
C;Species: human herpesvirus 4, Epstein-Barr virus
C;Species: human herpesvirus 4, Epstein-Barr virus
C;Species: 5-Feb-1985 #sequence_revision 25-Feb-1985 #text_change 09-Jul-2004
C;Accession: C43043; 842440; A03773; 833021
R;Bankier, A.T.; Deininger, P.L.; Farrell, P.J.; Barrell, B.G.
A;Title: Sequence analysis of the 17,166 bp EcoRI fragment C of B95-8 Epstein-Barr virus
A;Reference number: A93065; MUID:85035713; PMID:6092825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C.; Species: Mycobacterium tuberculosis
C.; Species: Mycobacterium tuberculosis
C.; Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 20-Jun-2000
C.; Accession: B70807
R; Colo. S.T.; Broach, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-54, 1998
A, Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A, Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A, Reference number: A70500; MUID:98295987; PMID:9634230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 1-641 <BAN>
A; Cross-references: UNIPROT: P03211; EMBL: V01555; NID: 959074; PIDN: CAA24816.1; PID: 913348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A Experimental source: strain B95-8
R; Baer, R.; Bankier, A.T.; Biggin, M.D.; Deininger, P.L.; Farrell, P.J.; Gibson, T.J.; I Nature 310, 207-211, 1984
A; Title: DNA sequence and expression of the B95-8 Epstein-Barr virus genome.
A; Reference number: A03794; MulD:84270667; PMID:608149
A; Contents: annotation; protein coding region
A; Sample, J.; Hummel, M.; Brann, D.; Birkenbach, M.; Kieff, B.
Proc. Natl. Acad. Sci. U.S.A. 83, 5096-5100, 1986
A; Title: Nucleotide sequences of maNAs encoding Epstein-Barr virus nuclear proteins: a ]
A; Reference number: S42440; MUID:86259739; PMID:3460083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical glycine-rich protein Rv3512 - Mycobacterium tuberculosis (strain H37RV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62
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                                                                                                                                                                             17 GPGGPGIPDGPGGNAGGPGEA----GATGGRGPRGAGAARASGPGG-GAPRGPHGGAASG
                                                                                                                                                                                                                                                               3 AEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGAPR
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A,Status: preliminary
A,Molecule type: mRNA
A,Molecule type: mRNA
A,Residues: 1-66 <SAM>
A,Residues: 1-66 <SAM>
C,Superfemences: EMBL:M13941; NID:g330399; PIDN:AAA45889.1; PID:g555157
C,Superfamily: Epstein-Barr virus nuclear antigen
C,Superfamily: Epstein-Barr virus nuclear antigen
C,Keywords: DNA binding; transcription regulation
                                                                                           11; Gaps
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         Length 145;
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                                                                                      Indels
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Score 155.5; DB 2;
Pred. No. 3.7e-05;
0; Mismatches 24;
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Query Match
Best Local Similarity 51.4%;
Matches 37; Conservative (
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                                                                                                                                                                                                                                                                                                                                                                                                                                             GPG-CPGGPGGP
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Matches 37; Conserv
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A;Cross-references: EMBL:X00820; NID:g35657; PIDN:CAA25394.1; PID:g35658
KROSSOUW, C.M.S.; Vergeer, W.P.; du Plooy, S.J.; Bernard, M.P.; Ramirez, F.; de Wet, W J. Biol. Chem. 262, 15151-15157, 1987
A;Title: DNA sequences in the first intron of the human pro-alpha 1(I) collagen gene eni A;Reference number: 155254; MUID:88033098; PMID:2822714
A;Accession: L55254
A;Status: translation not shown; translated from GB/EMBL/DDBJ
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A;Residues: 1-34 cCH2>
A;Cross-references: GB:N10627; NID:g180383; PIDN:AAAS1992.1; PID:g553226
B;Wirtz, M.K.; Keene, D.R.; Hori, H.; Glanville, R.W.; Steinmann, B.; Rao, V.H.; Hollis: J. Biol. Chem. 265, 6312-6317, 1990
J. Biol. Chem. 265, 6312-6317, 1990
J. Biol. Chem. 265, GM:Neron of the second o
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A;Cross-references: GB:S67495; NID:g239007; PIDN:AAB20350.1; PID:g239008
A;Note: sequences from the 5' and 3' ends only are shown; mutant sequence 263-Arg report R;Morgan, P.H.; Jacobs, H.G.; Segrest, J.P.; Cunningham, L.W.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-34 < BOR>
A; Residues: 1-34 < BOR>
A; Chu, M.L.; de Wet, W.; Bernard, M.; Ramirez, F.
J. Biol. Chem. 260, 2315-2320, 1985
A; Title: Fine Structural analysis of the human pro-alpha 1 (I) collagen gene. Promoter
A; Reference number: I55237; MUD: 85130970; PMID: 2887713
A; Accession: I55237
A; Status: translation not shown; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                               A,Molecule type: DNA
A,Readidues: 1-45 -ROS2
A;Cross-references: GB:J02829; NID:g180387; PIDN:AAA51993.1; PID:g180388
A;Cross-references: GB:J02829; NID:g180387; PIDN:AAA51993.1; PID:g180388
R;Bornstein, P.; McKay, J.; Morishima, J.K.; Devarayalu, S.; Gelinas, R.E.
Proc. Natl. Acad. Sci. U.S.A. 84, 8869-8873, 1987
A;Title: Regulatory elements in the first intron contribute to transcriptional
A;Reference number: A39943; MUID:88097389; PMID:3480516
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A;Residuee: 156-183 <WEI>
R;Click, B.M.; Bornstein, P.
Biochemistry 9, 4699-4706, 1970
A;Title: Isolation and characterization of the cyanogen layReference number: A90567; MUID:71038625; PMID:5529814
A;Rottents: CNBr0-1; CNBr2, CNBr4, CNBr5
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                              Aprocession: A91200
A; Molecule type: protein
A; Residues type: protein
A; Residues type: protein
A; Residues type: protein
A; Residues type: protein
A; Note: Pro-726 is the only 3-hydroxyproline and the only hydroxylated proline in positi
B; Rauterberg, U; Fietzek, P; Rexrodt, F; Becker, U; Stark, M; Kuehn, K.
FBBS Lett. 21, 75-79, 1972
A; Title: The amino acid sequence of the carboxyterminal nonhelical cross link region of
A; Reference number: A43048
A; Accession: A43048
A; Molecule type: protein
A; Residues: 75-779 < 742.
A; Reperimental source: skin
C; Comment: Ivgines at positions 115, 124, 274, 346, 424, 496, 658, and 670 may be hydrox
C; Comment: The order of the eight CNBr peptides in the alpha 1(I) chain of bovine skin c; C; Comment: The complete chain contains 1052 residues.
C; Comment: The complete chain contains 1052 residues
C; Comment: The order of the eight CNBr peptides in the alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology;
C; Superfamily: collagen alpha 1(I) chain; fibrillar collagen carboxyl-terminal homology;
C; Keywords: coiled coll; extracellular matrix; glycoprotein; pyroglutamic acid; trimer;
F; 1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental
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A,Molecule type: DNA
A,Residues: 1-369; LV,371-589 < DAL>
A,Cross-references: 1-369; LV,371-589 < DAL>
A,Cross-references: 1-369; LV,371-589 < DAL>
A,Tromp, G.; Kuivaniemi, H.; Stacey, A.; Shikata, H.; Baldwin, C.T.; Jaenisch, R.; Prock
B,Triche: Structure of a full-length cDNA clone for the prepro-alpha-1(I) chain of human
A,Accession: S01143
A,Accession: S01143
A,Molecule type: mRNA
A,Residues: 1-472 < TRO>
A,Molecule type: mRNA
A,Residues: L-472 < TRO>
A,Molecule type: MRBL:X07884; NID:g30015; PIDN:CAA30731.1; PID:g30016; GB:M36546; NID
A,Note: submitted to the EMBL/GenBank/DDBJ databases by Prockop, D.J., 13-JUN-1988
B,Chu, M.L.; de Wet, W.; Bernard, M.; Ding, J.F.; Morabito, M.; Myers, J.; Williams, C.;
Mature 310, 337-340; 1944.
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NiAlternate names: procollagen alpha 1(I) chain

C;Species: Homo sapiens (man)

C;Date: 12-Aug-1981 #sequence revision 04-Oct-1996 #text change 09-Jul-2004

C;Accession: 160114; S01143; A93335; 155254; A39943; 155237; A35233; S09400; B90567; S11

S;69; A29439; 153466; A02852; 137247

R;D'Alessio, M.; Bernard, M.; Pretorius, P.J.; de Wet, W.; Ramirez, P.; Pretorious, P.J.

A;Title: Complete nucleotide sequence of the region encompassing the first twenty-five e

A;Reference number: 160114; MIDD: 88329734; PMID: 28433432
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A; Reference number: A91200; MUID: 73042275; PMID: 4343807
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A;Molecule type: DNA
A;Residues: 1-58,'Q',60-181 <CHU>
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R;Cohn, D.H.; Apone, S.; Eyre, D.R.; Starman, B.J.; Andreassen, P.; Charbonneau, H.; Nic J. Biol. Chem. 263, 14605-14607, 1988
Jritle: Substitution of Cysteine for Glycine within the Carboxyl-terminal Telopeptide CA;Reference number: I55269; MUID:89008319; PMID:3170557
A;Accession: I55269
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C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 20-Jun-2000
C;Accession: D70807
C;Accession: D70807
C;Accession: D70807
C;Accession: D70807
C;Accession: D70807
C;Accession: D.; Burch: M.; Barkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, F.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Maineream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Accession: D70807
A;Accession: D70807
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
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A;Cross-references: GB:AL022022; GB:AL123456; NID:g3261554; PIDN:CAA17751.1; PID:g29244:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 for the C-propeptide domain.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               825 AKGEPGDAGAKGDAGPPGPAGPAGPPGPIGNVGAPGAKGARGSAGPPGATGFPGAAGRVG 884
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ---GIPDGPGGNAGGPGEA------GATGGRGPRGA 48
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1187-1194, 'C', 1196-1220 «COH»
A; Cross-references: GB: M23213; NID: g340842; PIDN: AAB59363.1; PID: g499622
A; Note: mutant sequence from a patient with mild osteogenesis imperfecta
B; Maekelae, J.K.; Raassina, M.; Virta, A.; Vuorio, E.
Nucleic Acids Res. 16, 349, 1988
A; Title: Human pro-alpha-1(I) collagen: cDNA sequence for the C-propeption
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Best Local Similarity 37.2%; Pred. No. 0.0006;
Matches 48; Conservative 4; Mismatches 42; Indels 35;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1489;
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                                                  A; Experimental source: normal dermal fibroblast culture A; Accession: C47426
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Pred. No. 0.00066;
2; Mismatches 31;
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                                                                                                                                                      A Molecule type: mRNA
KResidues: 1179-1276, 'H',1278-1464 <CH5:
A;Experimental source: fetal cell 86-237
A;Accession: D47426
                                                                                                                                                                                                                                                                                                                                                                                                       A, Experimental source: fetal cell 86-146
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A; Residues: 1179-1387, 'R', 1389-1464
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41.1%;
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A; Residues: 1179-1336,1339-1464
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                    CH4
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J. Biol. Chem. 245, 5042-5048, 1970

A;Title: Comparative study of glycopeptides derived from selected vertebrate collagens. A;Reference number: A92069; MUID:71001508; PMID:4319110

A;Accession: A92069

A;Molecule type: protein

A;Rosidues: 263-268 «MOR»

A;Experimental source: skin

A;Note: attachment of 2-O-alpha-D-glucosyl-O-beta-D-galactose to 5-hydroxylysine

B;Labhard, M.E.; Hollister, D.W.

Matrix 10, 124-130, 1990

A;Title: Segmental amplification of the entire helical and telopeptide regions of the classification of the structure of the classification of the structure of the classification of the structure of the classification of the classifi
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A, Residues: 425-1250, X7,1252-1328, S',1330-1390, X7,1392-1464 <BER>
A, Residues: 425-1250, X7,1252-1328, S',1330-1390, X7,1392-1464 <BER>
A, Cross-references: GSK01228, NID:G180391; PIDN:AAAS1995.1; PID:G180392
A, Note: sequence partially completed for missing nucleotides by A29439
B; Chu, M.L.; Gargiulo, V.; Williams, C.J.; Ramirez, F.
J. Biol. Chem. 260, 691-694, 1985
A, Title: Multiexon deletion in an osteogenesis imperfecta variant with increased type II
A, Reference number: A22161, MUID:85104934; PMID:2981843
A, Accession: A22161
A, Rocession: A22161
A, Residues: 472-594, 'R', 596-607 <CH3>
A, Cross-references: GB:K03178; GB:K03179; NID:g179612; NID:g179613; PIDN:AAA51847.1; PID
A, Note: the authors translated the codon CGT for residue 595 as Pro
B, Mallis, G.A.; Starman, B.J.; Zinn, A.B.; Byers, P.H.
A, Hum. Genet. 46, 1034-1040, 1990
A, Title: Variable expression of osteogenesis imperfecta in a nuclear family is explained
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A; Residues: 710-720, 'E',722-737,'E',739-745 <WAL>
A; Note: the authors translated the codons CAG for 721 and CGT for 738 as Glu
R; Forlino, A.; Zolezzi, F.; Valli, M.; Pignatti, P.F.; Cetta, G.; Brunelli, P.C.; Mottes
Hum. Mol. Genet. 3, 2201-2206, 1994
A; Title: Severe (type III) osteogenesis imperfecta due to glycine substitutions in the A; Reference number: 154365; MUID:95187161; PMID:7881420
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A; Residues: 746-766,'S', 768-781 < FOR>
A; Residues: 746-766,'S', 768-781 < FOR>
A; Cross-references: GB:L47667; NID:9109093; PIDN:AAB59576.1; PID:91009094
R; Chessler, S.D.; Wallis, G.A.; Byers, P.H.
B; Chessler, S.D.; Ges, 18818-18225, 1993
A; Title: Mutations in the carboxyl-terminal propeptide of the pro alpha 1(I) chain of ty
A; Reference number: A47426; MUID:93352646; PMID:8349697
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A; Cross-references: GB: S64717; NID: g408195; PIDN: AAB27677.1; PID: g408196
A; Cross-references: GB: S64717; NID: g408195; PIDN: AAB27677.1; PID: g408196
A; Note: mutant sequence from patient with osteogenesis imperfecta
B; Bernard, M.P.; Chu, M.L.; Myers, J.C.; Ramirez, F.; Bikenberry, B.F.; Prockop, D.J.
Biochemistry 22, 5213-5223, 1983
A; Title: Nucleotide sequences of complementary deoxyribonucleic acids for the proalphal
A; Reference number: A90476; MUID: 84080385; PMID: 6689127
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A;Residues: 1179-1276,'H',1278-1336,1339-1387,'R',1389-1464 <CHE>
A;Residues: 1179-1276,'H',1278-1336,1339-1387,'R',1389-1464 <CHE>
A;Cross-references: GB:S64596; NID:G407589; PIDN:AAB27856.1; PID:9407590
A;Note: sequence extracted from NCBI backbone (NCBIN:136444, NCBIP:136445)
A;Note: does not represent an experimentally determined sequence but three different A;Accession: B47426
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A; Molecule type: mRNA
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A, Status: translated
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Gaps

922

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Gaps

20;

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Prochetical glycine-rich protein Rv2853 - Mycobacterium tuberculosis (strain H37RV)
CiSpecies: Mycobacterium tuberculosis
CiSpecies: Mycobacterium tuberculosis
CiDate: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 31-Mar-2003
CiAccession: H7089
Exicole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, 'Comnor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seelton, S.; Skelton, S.; Squares, S.
Axuthors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A; Athler: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A; Reference number: A70500; MUID:98295987; PMID:9634230
A; Accession: H70589
A; Status: preliminary; nucleic acid sequence not shown; translation not shown
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C;Species: Acanthamoeba castellanii
C;Date: 29-Oct-1999 #sequence_revision 29-Oct-1999 #text_change 09-Jul-2004
C;Accession: T32734
R;Lee, W.L.; Ostap, E.M.; Zot, H.G.; Pollard, T.D.
Rsibmitted to the EMBL Data Library, August 1998
A;Bescription: Hydrodynamic and ligand binding properties of Acanthamoeba myosin-IA GPA,
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A;Reaidues: 1-615 <COL>
A;Cross-references: GB:Z95207; GB:AL123456; NID:g3261745; PIDN:CAB08453.1; PID:e315182;
A;Experimental source: strain H37Rv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A,Molecule type: DNA
A,Residues: 1-1215 <LEE>
A;Cross-references: UNIPROT:077202; EMBL:AF085185; NID:g3599477; PID:g3599478; PIDN:AAC
A;Experimental source: strain Neff
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3,
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                                                                                                     155 TAGGTYYVIIVQNGQRVIVNCATCRLCCVGRNITYSVVTDSPVVPPLVVTGTP----- 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -TGDADGPG----GPGIPDGPGGNAGGPGEAGATGGRGP 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 GTGGSTGDADGPGGPGIPDGPGGNAGG--PGEAGATGGRGPRGA-GAARASGPGGGAPRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: Rv2853
C;Superfamily: uncharacterized glycine-rich protein, PE motif containing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23;
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Best Local Similarity 41.0%; Pred. No. 0.00072;
Matches 41; Conservative 3; Mismatches 33; Indels 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 15.6%; Score 149.5; DB 2; Length 615; Best Local Similarity 49.3%; Pred. No. 0.00039; Matches 35; Conservative 5; Mismatches 26; Indels 5;
                                                                                                                                                                                         107 RSLAQDAPPLPV----PGVLLKEFTVSGNILTIRLT 138
                                                                                                                                                                                                                                          A,Accession: T32734
A,Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  590 GHGDTTSGKNG 600
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 GRGTGGS--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C;Genetics:
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C;Species: Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 29-Oct-1999 #text_change 09-Jul-2004
C;Accession: T32812
R;Gattung, S.; Maggi, L.
R;Reference number: Z2127
R;Reference number: Z212
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cyccession: F70806
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Perkhill, T.; Gentles, S.; Hamin, N.; Holroyd, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamin, N.; Holroyd, S. Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A;Reference number: A70800, MUID: 98295987; PMID: 9634230
A;Retus: preliminary; nucleic acid sequence not shown; translation not shown A;Residues: 1-1901 acOL>
A;Residues: 1-1901 acOL>
A;Cobs-references: UNIPROT: 053553; GB: AL123456; NID: G3261554; PIDN: CAA1774
A;Experimental source: strain H37Rv
C;Genetics:
A;Gene: Rv3508
C;Superfamily: collagen alpha 1(IV) chain
                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical glycine-rich protein Rv3508 - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 09-Jul-2004
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140 GAGAAGAPGOAGGPGGPAGLWGNGGPGGAGGSGGGTCGAGGAGGWLFGVGGAGGVGGAGG 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------GATGGRGPRGA 48
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15.7%; Score 150.5; DB 2; Length 530;
Best Local Similarity 32.3%; Pred. No. 0.00028;
Matches 51; Conservative 9; Mismatches 65; Indels 33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 151; DB 2; Length 1901;
Pred. No. 0.00082;
2; Mismatches 31; Indels 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5 GRGTGGSTGDADGPGGP-----GIPDGPGGNAGGPGEA-
                                                                                                                                                                                                                    200 Grecaccipicus vecesado vecaceres 229
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                                                                                                                                    49 GAARASGPG----GGAPRGPHGGAASGLNG 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GAARASGPG----GGAPRGPHGGAASGLNG 74
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 15.7%;
Best Local Similarity 41.1%;
Matches 37; Conservative
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A; Molecule type: DNA
A; Residues: 1-252 «KEL»
A; Residues: 1-252 «KEL»
Cross-references: UNIPROT:P10495; EMBL:X13595; NID:g21000; PIDN:CAA31931.1; PID:g2100:
C; Superfamily: Phaseolus glycine-rich protein 1.0
C; Keywords: cell wall; structural protein
E;1-30/Domain: signal sequence #status predicted «SIG»
F;1-322/Product: glycine-rich protein 1.0 #status predicted «MAT»
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: protein
A; Residues: 1-1036 <HIG>
A; Residues: 1-1036 <HIG>
A; Experimental source: skin
A; Note: this is the latest in a series of papers from these workers elucidating the seqn
R; Eyre, D.R.; Glimcher, M.J.
Biochem. Biophys. Res. Commun. 48, 720-726, 1972
A; Title: Bridence for a previoualy undetected sequence at the carboxyterminus of the all A; Reference number: A90181; MUID:72243016; PMID:5047697
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A, Residues: 1037-1042 < EYR>
A, Residues: 1037-1042 < EYR>
A, Residues: 1037-1042 < EYR>
A, Residues: 1037-1042 above correspond to the carboxyl end of the protein
A, Mote: residues 1037-1042 above correspond to the carboxyl end of the protein
C, Comment: Lysines at positions 103, 700, 934, and 946 above may be hydroxylated in som
C, Comment: Most of the prolines at the third position of the trippetide repeating unit
C, Comment: Pro-1002 is the only 3-hydroxyprolline and the only hydroxylated prolline in p
C, Superfamily: collagen alpha 1(1) chain, fibrillar collagen carboxyl-terminal homology
C, Keywords: coiled coil; extracellular matrix; glycoprotein; pyroglutamic acid; trimer;
F;1/Modified site: pyrrolidone carboxylic acid (Gln) #status experimental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           complete prima
                                 glycine-rich protein 1.0 precursor - kidney bean (5)pecies: Phaseolus vulgaris (kidney bean) (5)pecies: Phaseolus vulgaris (kidney bean) (5)pecies: 30-Sep-1989 #sequence_revision 19-May-1994 #text_change 09-Jul-2004 (5)Accession: S01821 (7) Eamb, C.J. (7) Eamb, C.J. (7) Sauer, N.; Lamb, C.J. (7) Sauer, N.; Lamb, C.J. (7) September (7) S625-3633, 1988 A; Title: Glycine-rich cell wall proteins in bean: gene structure and association of A; Reference number: S01820; MUID: 89091109; PMID: 3208742
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Collagen alpha 1(I) chain - chicken (tentative sequence) (fragments)
C;Species: Gallus gallus (chicken)
C;Species: 12-Aug-1981 #sequence_revision 06-Jul-1982 #text_change 31-Mar-2000
C;Accession: A99458; A90181; A0285;
R;Highberger, J.H.; Corbett, C.; Dixit, S.N.; Yu, W.; Seyer, J.M.; Kang, A.H.; 6
Biochemistry 21, 2048-2055, 1982
A;Title: Amino acid sequence of chick skin collagen alphal(I)-CB8 and the compl.
A;Reference number: A90458; MUID:82231995; PMID:7093229
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Pred. No. 0.00074;
5; Mismatches 50; Indels 75;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 148.5; DB 1
Pred. No. 0.00021;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                214 RGSGGGGGGYGG---GGARG 231
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15.5%;
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Best Local Similarity 29.3%;
Matches 54; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 44.4
Matches 36; Conservative
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Submitted to the EMBL Data Library, April 1995

Submitted to the EMBL Data Library, April 1995

Submitted to the EMBL Data Library, April 1995

A; Reference number: 220382

A; Reference number: 127525

A; Residua: preliminary; translated from GB/EMBL/DDBJ

A; Molecule type: DNA

A; Residuae: 1-297 < WILL>

A; Residuae: 1-297 < WILL>

A; Experimental source: clone ZC373

A; Experimental source: clone ZC373

A; Experimental source: clone ZC373

A; Map position: X

A; Introns: 118/1
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A;Experimental source: clone F08G5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3,
GRGAGRALPMGGGDEAPLPPVPTGPSGGPGPAGPGRGMPAGPGRGAPGPGRGGPGCPPGP 1054
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                                                                                                                                                                                                                                                                   hypothetical protein ZC373.7 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T27525
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hypothetical protein F08G5.4 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T20605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7 GTGGSTGDADGPGGPGIPDGPGGN----AGGPGEAGATGGRGPRGAGAARASG-PGGGA
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                                                                                                                  1055 AGPGRG-APGPGRGAPGPSRGGPGGPPGGRGMPPPGGRG 1093
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Pred. No. 0.00022;
5; Mismatches 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 149; DB 2;
Pred. No. 0.00022;
2; Mismatches 33
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Bubmitted to the EMBL Data Library, April 1996
A;Reference number: 219299
A;Accession: T20605
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-299 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           219 GPSGNPGQDGAAGAPGQAGPAGPAGPDGQ 247
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ilarity 40.4%;
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ilarity 45.8%;
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Matches 36; Conserv
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Best Local Similarity
Matches 38; Conserv
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A;Map position: 4
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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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September 11, 2005, 01:20:48; Search time 238.286 Seconds (without alignments) 386.822 Million cell updates/sec Run on:

US-09-529-206E-4 959 1 MQAEGRGTGGSTGDADGPGG.......WITQCFLPVFLAQPPSGQRR 180 score: Sequence: Perfect

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

1612378 seqs, 512079187 residues Searched:

1612378 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries

1: uniprot sprot:*
2: uniprot_trembl:* UniProt_03:* .Natabase

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	58 homo sapien	homo	homod	homo	stre	-							w4 bacillus ce	99 bacillus th		w4 nephila cla			-	_	86 oncorhynchu	b9 oncorhynchu	-	w1 nephila ina		51 drosophila	-		mytilus	61 mytilus edu
esc	P78358	075638	Q9ny13	014657	P42534	Q6j6n0	9bi	044367	Q8mw53	06rf45	Oppin9	08i7u1	Q636w4	Q6h£99	Q7u022	Q9nhw4	091252	044358	29nhw2	076271	093486	0910b9	016988	O9nhw1	Q82k53	061351	P03211	Q777e1	Q8mw54	016161
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% Query Match	100.0	.62.0	9.09	23.1	18.2	18.0	17.6	17.5	17.3	16.9	16.9	16.8	16.7	16.7	16.7	16.7	16.7	16.7	16.6	16.6	16.5	16.5	16.4	16.4	16.3	16.2	16.2	16.2	16.2	16.2
Score	959	595	581	222	174.5	172.5	168.5	167.5	165.5	162	162	161	160.5	160.5	160.5	160.5	160	160	159.5	159	158.5	158.5	157	157	156.5	155.5	155.5	155.5	155	155
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Q81wx2 bacillus an

Q81WX2

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478

16.1

154.5

31

Q6hv27 bacillus an Q8mw5 mytilus gal Q9bit7 nephila ina Q6mw7 mycobacteri Q6nz15 brachydanio Q6pei9 brachydanio Q6pv34 ciona intes P02453 bos taurus Q7twc mycobacteri Q9d984 mus musculu Q9v5v8 drosophila Q9v5v8 drosophila Q01851 homo sapien O93485 oncorhynchu
Q6HV27 Q6HW55 Q9BHT7 Q6MW7 Q6MX15 Q6PX15 Q6PX14 Q6TXJ4 Q7TWG Q9DS4 Q9DS4 Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W Q9Y5W
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481 905 1953 1079 1449 734 779 1938 219 610 1715 423
166.1 166.1 166.0
154.5 154.5 154.5 153.1 153.1 152.5
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### ALIGNMENTS

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-98430682; PubMed=9759882; MEDLINE-98430682; PubMed=9759882; Medium S.L., Zeng G., Topalian S.L., Hang R.-F., Johnston S.L., Zeng G., Topalian S.L., Schwartzentruber D.J., Rosenberg S.A.; Rosenberg S.A.; A breast and melanoma-shared tumor antigen: T cell responses to antigenic peptides translated from different open reading frames."; J. Immunol. 161:3596-3506 (1998).

-I TISSUE SPECIFICITY: Expressed in terrine myometrium.

-I SIMILARITY: Belongs to the CTAG family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Melanoma;
MEDLINE=98289662; PubMed=9626360;
Lethe B., Lucas S., Michaux L., de Smet C., Godelaine D., Serrano A.,
de Plaen B., Boon T.,
"LAGE-1, a new gene with tumor specificity.";
Int. J. Cancer 76:903-908(1998).
                                                                                                                                                                                                                                                                                           SEQUENCE PROM N.A.
MEDILTE=9793161, PubMed=9050879; DOI=10.1073/pnas.94.5.1914;
MEDILTE=9793161, PubMed=9050879; DOI=10.1073/pnas.94.5.1914;
Chen Y.-T., Scanlan M.J., Sahin U., Tuereci O., Gure A.O., Tsang S., Williamson B., Stockert E., Pfreundschuh M., Old L.J.;
"A testicular antigen aberrantly expressed in human cancers detected by autologous antibody accreaning."
Proc. Natl. Acad. Sci. U.S.A. 94:1914-1918(1997).
                                                                                                                                     Cancer/testis antigen 1B (Autoimmunogenic cancer/testis antigen NY-
                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                              Last sequence update)
Last annotation update)
                                    180 AA
                                  PRT;
                                                                                                                                                                            Name=CTAG1B; Synonyme=CTAG, CTAG1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U87459; AAB49693.1; -.
EMBL; AJ003149; CAA05908.1; -.
EMBL; AF036567; AAD05202.1; -.
Genew; HGNC:2491; CTAGIB.
                                                                           Created)
                                    STANDARD;
                                                                         15-DEC-1998 (Rel. 37,
15-DEC-1998 (Rel. 37,
25-OCT-2004 (Rel. 45,
                                                                                                                                                                                                (Human)
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                        NCBI_TaxID=9606;
                                                                                                                                                                                                Homo sapiens
                                    CTG1 HUMAN
                                                       P78358;
RESULT 1
CTG1_HUMAN
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MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A Hischul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gabbs R.A.,

Richards S., Worley K.M., Sodergren E.J., Lu X., Gibbs R.A.,

Pahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.M., Touchman J.W., Green E.D., Dickson M.C.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
                                                                                                                                                                                           PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG 120
                                                                                                                                                                                                                                                 VLLKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR 180
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GLN-89 AND ARG-138.
                                                                                                                                                              1 MOAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
                                                                                                                                                                                                          1 MOAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
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                                                                                                          Gaps
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"Interleukin-2-induced, melanoma-specific T cells recognize CAMEL,
unexpected translation product of LAGE-1.";
Int. J. Cancer 82:442-448(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Melanoma;
MEDLINE=9828962; PubMed=9626360;
Lethe B., Lucas S., Michaux L., de Smet C., Godelaine D., Serrano i de Plaen E., Boon T.;
"LAGE-1, a new gene with tumor specificity.";
Int. J. Cancer 76:903-908(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                          ö
                                                                               Length 180;
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                                                                                                                                                                                                                                                                                                                                          CTG2 HUMAN STANDARD; PRT; 210 AA.
075638; 075637; 09BU80; 09UJ89; 09Y479;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
25-0CT-2004 (Rel. 45, Last annotation update)
25-0CT-2014 (Rel. 45, Last annotation update)
Name-CTAG2; Synonyms-ESO2, LAGE1;
Homo sapiens (Human)
                                                                                                          Indels
                                                     B122C5C2C8BE1569 CRC64;
                                                                            ; Score 959; DB 1;
; Pred. No. 4.7e-58;
0; Mismatches 0;
                         Gly-rich.
Potential
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                                                     17992 MW;
                                                                               100.0%;
                                                                             Query Match
Best Local Similarity 100.0
Matches 180; Conservative
            Antigen; Transmembrane.
DOMAIN 5 82
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156 1
180 AA;
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MIM; 300156; -.
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Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
"Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LTAADHROLQLSISSCLQQLSLLMWITQCFLPVFLAQAPSG
QRR (in isoform 1.20=1.1)
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MSVWDQDREGAGRMRVVGWGLGSASPEGQKARDLRTPKHKV
SEQRPGTPGPPPEGAQGDGCRGVAFNVMFSAPHI -> IR
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                                                                                                                                                                                                                        Name=LAGE-1A: Synonyms=LAGE-1S;
Isold=075638-2; Sequence=VSP 004301;
ISOLG=075638-2; Sequence=VSP 004301;
TISSUE SPECIFICITY: Testis and very low level in placenta and in some uterus samples. Observed in 25-50% of tumor samples of melanomas, non-small-cell lung carcinomas, bladder, prostate and DOMAIN: A transmembrane domain is present in isoform LAGE-1A. SIMILARITY: Belongs to the CTAG family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           62.0%; Score 595; DB 1; Length 210; 82.0%; Pred. No. 3.4e-33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Alternative splicing; Antigen; Polymorphism; Transmembrane DOMAIN 5 79 Gly-rich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8BE0EE00AE55E8BE CRC64;
                                                                                                                                          Event=Alternative splicing; Named isoforms=2;
Name=LAGE-1B; Synonyms=LAGE-1L;
IsoId=075638-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3 -> Q.
/FTId=VAR_007856.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FTIG=VSP_004301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FTId=VAR_007855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /FTId=VAR 007857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            142
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; AJ223093; CAA1117.1; --
EMBL, AJ223093; CAA1116.1; --
EMBL; AJ223040; CAA11043.1; --
EMBL; AJ223041; CAA11044.1; --
EMBL; AJ012834; CAA10194.1; --
EMBL; AJ012835; CAA10196.1; --
EMBL; AJ012835; AAH02833.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          210 AA; 21119 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 VLLKEFTVSGNIL 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 AVLKDFTVSGNLL 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 82.0
Matches 109; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTAG2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             H-InvDB; HIX0017163; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HGNC: 2492;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MIM; 300396; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9NY13
Q9NY13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HAD
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"Characterization and fine localization of two new genes in Xq28 using the genomic sequence/EST database screening approach.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              14; Mismatches
                                                                                                      IDENTIFICATION, AND TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; X92896; CAA63489.1; ALT_FRAME.
MIM; 300060; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; BC015744; AAH15744.2; -. EMBL; BC062330; AAH62330.1; -.
                            the genomic sequence/EST di
Genomics 34:323-327(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
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X Straubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A Straubberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

A Riausher R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

Altschul S.F., Zeeberg B., Buctow K.H., Schaefer C.F., Bhat N.K.,

Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

Datchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Brownstein M.J., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Nilalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,

Rahe J., Helton E., Ketreman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C.,

Rutterfield Y.S.M., Krzywinski M.I., Schalska U., Smailus D.E.,

Butterfield Y.S.M., Krzywinski M.I., Skalska U., Smailus D.E.,

Butterfield Y.S.M., Krzywinski M.I., Skalska U., Smailus D.E.,

Bromeration and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            27 PGGNAGGPGBAGATGGRGPRGAGAARASGPGGGAPRGPHGGAASGLNGCCRCGARGPESR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PGGNAGGPGEAGATGGRGPRGAGAARASGPGGGAPRGPHGGAASGLNGCCRCGARGPESR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              87 LLEFYLAMPFATPMEAELARRSLAQDAPPLPVPGVLLKEFTVSGNILTIRLTAAD 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                             Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE=96374823; PubMed=8786131; DOI=10.1006/geno.1996.0293; Faranda S., Frattini A., Zucchi I., Patrosso C., Milanesi L., Montagna C., Vezzoni P.;
                                                                                                                                                                                                                                                                                                                                                                                                                           Score 581; DB 2; Length 142; Pred. No. 2.1e-32;
                                                                                                                        Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Butele
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                 Lethe B.G.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ275978; CAB76945.1; -.
Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE 142 AA; 13895 MW; 27EBE922AC4ACC7B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 2-143 FROM N.A., AND TISSUE SPECIFICITY.
01-OCT-2000 (TrEMBLrel. 15, Last sequence update) 01-OCT-2002 (TrEMBLrel. 22, Last annotation update) Hypothetical protein LAGE-2 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       014657; Q81278;
01-NOV-1997 (Rel. 35, Created)
25-OCT-2004 (Rel. 45, Last sequence update)
15-OCT-2004 (Rel. 45, Last annotation update)
ITBA2 protein (ESO-3 protein) (DXS9879E).
Name=ITBA2; Synonyms=ESO3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        143 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                        60.6%;
94.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 94.8
Matches 109, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                    Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human)
                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SGINGCCRCGARGPESRILEFYLAMPFATPMEAELARRSLAQDAPPLPVPGVLLKEFTVS 129
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 DADADAG------GGADGGDGR----GGHSCRG-GVDTAAAPAGGAPPAHAPGPGRDAA 50
Alpen B., Guere A.O., Scanlan M.J., Old L.J., Chen Y.-T.;
Alpen B., Guere A.O., Scanlan M.J., Old L.J., Chen Y.-T.;
"A new member of the NY-ESO-1 gene family is ubiquitously expressed in somatic tissues and evolutionarily conserved.";
Gene 297:141-149(2002).
-!- TISSUE SPECIFICITY: Ubiquitous.
-!- SINILARITY: Belongs to the CTAG family.
-!- CAUTION: Ref. 2 sequence differs from that shown due to a frameshift in position 54.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14 DADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAARASGPGGGAP----RGPHGGAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=A3(2) / M145,
MEDLINE=2130410; PubMed=12000953; DOI=10.1038/417141a;
MEDLINE=2199410; PubMed=12000953; DOI=10.1038/417141a;
BENLIS S. D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,
Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,
Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,
Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
Huang C.-H., Kieser T., Larke L., Murphy L.D., Oliver K., O'Neil S.,
Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Hopwood D.A.;
Hopwood D.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HYDL STRCO STANDARD; PRT; 627 AA.
P42534; Q9S2L7;
01-NOV-1995 (Rel. 32, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Putative polyketide hydroxylase (BC 1.14.13.-) (WhiE ORF VIII).
OrderedLocusManes=SCO5321; ORFNames=SC659.12c;
Streptomyces coelicolor.
Bacteria; Actinobacteria; Actinobacterides;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             143 AA; 14804 MW; AD164559371449F8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           101 GRILVVRWKAEDCRLLRISVINFLDQLSLVVRTMQRFGP 139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           130 GNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLP 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Streptomycineae; Streptomycetaceae; Streptomyces,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23.1%; Score 222; DB 1; 42.1%; Pred. No. 6.2e-08;
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Gaps

25;

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141 GPGPGGAPGAPGGPGGPGGPGGPGGVGPGGAGGYGPGGAGGVGPGGAGGVGPGAGG 200
                                                                                                                                                                                                                                                                                                  156 GVGPGGAPGAPGGPGGPGGPGGPGG-VGGPLGAGA-GGVGPGGAGAYGPGGAGAYGPGGV 213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5 GRGTGGSTGDADGPGGPGIPDGPGGNAG-----GPGEAG----ATGGRGPRGA-- 48
GO; GO:0005578; C:extracellular matrix (sensu Metazoa); IEA.
GO; GO:0005201; F:extracellular matrix structural constituent; IEA.
InterPro; IPR003979; tropoelastin.
PRINTS; PR01500; TROPOELASTIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=21179804; PubMed=11283372; DOI=10.1126/science.1057561; MEDLINE=21179804; PubMed=11283372; DOI=10.1126/science.1057561; Gatesy J., Hayashi C., Motriuk D., Woods J., Lewis R.; "Extreme diversity, conservation, and convergence of spider silk fibrain sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Argiope trifasciata (Banded garden spider).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Araneidae; Argiope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2; Length 1002;
                                                                                                                                                           18.0%; Score 172.5; DB 2; Length 563; 46.5%; Pred. No. 0.00048; tive 1; Mismatches 27; Indels 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 17.6%; Score 168.5; DB 2; Length Local Similarity 44.3%; Pred. No. 0.0015; les 43; Conservative 1; Mismatches 34; Indels
                                                                                                                                                                                                                                                         5 GRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gatesy J.E., Hayashi C.Y.;
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF350265; ARX30594.1; -.
GO; GO:0006817; C:cytoplasm; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
InterPro; IPR008160; Collagen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1002 1002
1002 AA; 75889 MW; 432D73E1EDF6A8BA CRC64;
                                                                                                                      D67BE594E296CA07 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                      214 GLGGAGAYGPGGAGPGGAGPHGPGGPGGAG---PGGEGP 249
                                                                                                                                                                                                                                                                                                                                               83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                               51 ----ARASGPGGGAP--RGPHGGAASGLNGCCRCGARGP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              49 ---GAARASGPGGGAPRGPHGGAASGLNGCCRCGARG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1002 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Flagelliform silk protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                      563 AA; 46277 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Science 291:2603-2605(2001).
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                                                                                                                                                                                       Local Similarity 46.5 es 46; Conservative
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01-JUN-1998 (
01-JUN-1998 (
01-JUN-2003 (
Precollagen D
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044367
ID 0443
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                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGG-RGPRGAGAARASGPGGGAPRG 63
                                                                                                                  31; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ren H.-L., Liu Z.-S., Pan F.-G., Wang X.-H., Ren L.-S., Bu X.-J.;
Submitted (MAR-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; AXS87193; AAT36347.1; -
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Araneomorphae; Entelegynae; Araneoidea; Araneidae; Araneus.
NCBI_TaxID=182803;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        64 PHGGAASGINGCCRCGARGPESRLLEFYLAMPF------ATPMEAE 103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----GPORGILNVALGYRYPRGAVVGADPATPVVPE 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18.2%; Score 174.5; DB 1; Length 627; 42.7%; Pred. No. 0.00039; tive 4; Mismatches 28; Indels 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               746E84A2A9E9511C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Complete proteome, FAD, Flavoprotein, Oxidoreductase. NP_BIND 22 51 FAD (Potential).
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Last annotation update)
(Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FAD (Potential).
FAD (Potential).
R -> A (in Ref. 2).
L -> LH (in Ref. 2).
C -> S (in Ref. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AL939123; CAB45603.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               64557 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, Flagelliform silk protein-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity 42.7%;
nes 47; Conservative
                                                                            SEQUENCE OF 1-255 FROM N.A.
                                Nature 417:141-147 (2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Araneus ventricosus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          234 2
627 AA;
             coelicolor A3(2).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [1]
SEQUENCE FROM N.A.
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CONFLICT
SEQUENCE
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Q6J6N0;
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Gaps

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GPHGGAASGLNGCCRCGARGPE
                                                                                                                      (TrEMBLrel. 27, C
(TrEMBLrel. 27, I
(TrEMBLrel. 28, I
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Local Similarity 50.0%;
He 42; Conservative
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Science 291:2603-2605(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                  PRELIMINARY;
                                                                                                                                                          Hypothetical protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI TaxID=156845;
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                  05-JUL-2004
25-OCT-2004
                                                                                                                        05-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Name=Flag;
                     63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
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                                                                           RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 GRGTGGSTGDADGPGGPG1PDGPGGNA--GGPGEAGATGGRGPRGAGAARASGPGGGAPR
                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                        Qin X.X., Coyne K.J., Walte J.H.;
"Tough tendons. Mussel byssus has collagen with silk-like domains.";
J. Biol. Chem. 272:32623-32627(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          13; Gaps
Name=preCol-D;
Mytilus edulis (Blue mussel).
Eukaryota; Metazoa; Mollusca; Bivalvia; Pteriomorphia; Mytiloida;
Mytiloidea; Mytilidae; Mytilus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mytilus galloprovincialis (Mediterranean mussel).
Eukaryota; Metazoa; Mollusca; Bivalvia; Pteriomorphia; Mytiloida;
Mytiloidea; Mytilidae; Mytilus.
                                                                                                                                                                                                                                                                                           17.5%; Score 167.5; DB 2; Length 922;
41.4%; Pred. No. 0.0016;
tive 5; Mismatches 32; Indels 21;
                                                                                              MEDLINE=98070444; PubMed=9405478; DOI=10.1074/jbc.272.51.32623;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 922;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pred. No. 0.0022;
1; Mismatches 29; Indels
                                                                                                                                                                           Qin X., Coyne K.J., Waite J.H.;
Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; AF029249; AAB96638.1; -.
EGO; GO:0005737; C:cytoplasm; IEA.
GO; GO:0006717; P:phosphate transport; IEA.
InterPro; IPR008160; Collagen.
                                                                                                                                                                                                                                                                      922 AA; 80306 MW; 599D155E47A2C24A CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                            213 GPGMPGGPGGPGGPGGIPGMTGPAGPPGPAGPQGPB 251
                                                                                                                                                                                                                                                                                                                                                                                       84
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01-0CT-2002 (TrEMBLrel. 22, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=22038007; PubMed=12042339;
Lucas J.M., Vaccarco E., Waite J.H.;
"A molecular, morphometric and mechanical comparise
elements of byssus from Mytilus edulis and Mytilus
                                                                                                                                                                                                                                                                                                                                                                                       ----GAPRGPHG-GAASGINGCC-----RCGARGPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Exp. Biol. 205:1807-1817(2002).
EMBL; AF448526; AAM34601.1; -0.00.0005737; C:cytoplasm; IEA.
GO; GO:000517; P:phosphate transport; IEA.
InterPro; IPR008160; Collagen.
Pfam: PF01391; Collagen; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17.3%; Score 165.5;
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                                                                                                                                                                                                                                               Pfam; PF01391; Collagen; 7.
                                                                                                                                                                                                                                                                                                      Local Similarıcy ...
nes 41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          39; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     galloprovincialis.";
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                                                                         SEQUENCE FROM N.A.
                                                                                                                                                       SEQUENCE FROM N.A.
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                                                                                                                                                                  IISSUE=Foot;
                                                                                                                                                                                                                                                                      SEQUENCE
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19 GRGGGPGFGPGFGPGFGPGFGPGFGPGFGPGFGPG----FGGRGPRGPGFGPRGPWSG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                             OŘFNames=At2gû4170;
Arabidopsis thaliana (Mouse-ear cress).
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; rosids;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xiao Y., Smith S.R., Ishmael N., Ayele M., Kumar N., Redman J., Riedmuller S., Utterback T., Whitelaw C.A., Fraser C.M., Town C.D.; Submitted (DEC-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=21179804; PubMed=11283372; DOI=10.1126/science.1057561; MEDLINE=21179804; PubMed=11283372; DOI=10.1126/science.1057561; Gatesy J., Hayashi C., Motriuk D., Woods J., Lewis R.; "Extreme diversity, conservation, and convergence of spider silk fibration and models.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Argiope trifasciata (Banded garden spider).
Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Araneidae; Argiope.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

A Underwood B.A., Xiao Y., Moskal W., Torian U., Redman J., Wu I Underwood B.A., Xiao Y., Moskal W., Torian U., Redman J., Wu I Utterback T., Town C.D.;

Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.

R EMBL; AY501356; AAR99368.1; -.

R EMBL; AY64917; AA76934.1; -.

R InterPro; IPR002083; MATH; -.

R InterPro; IPR003974; Traf_like.

R START; SM00061; MATH; 2.

R START; SM00061; MATH; 2.

R PROSITE; PS50144; MATH; 2.

R PROSITE; PS50144; MATH; 2.

R PROSITE; PS70145; MATH; 2.
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Pred. No. 0.0019;
0; Mismatches 32; Indels 1
                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                 420 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-JUN-2001 (TrEMBLrel. 17, Created)
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                                                                                                                                                                                                                                                                                                                        Created)
                                                                  233 GPPGPA------GPQGPE 244
                                                                                                                                                                                                                                                 PRT;
84
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'n 23

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Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
NCBI_TaxID=288681;
                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
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                                                                           SEQUENCE FROM N.A.
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SEQUENCE 1168 A
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                                                                                                                                                                                                                                         Collagen.
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                                                                                                                                                                                                                                                                                                              5 GRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEA------GATGGRGPRG---- 47
                                                                                                                                                                                                                                                                        61
                                                                                                                                                                                                                                                                      7 GTGGSTGDADGPGGPGIPDGPGCNAGGPGEAGATGGRGPRGAGAARASGPGGGAP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       32; Gaps
                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Araneidae; Araneus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ren H.-L., Liu Z.-S., Pan F.-G., Zhao J., Li Y.-S.; "Construction of Araneus ventricosus major ampullate gland cDNA library and screening spider silk gene."; shengwu jishu = Biotechnology 12:1-3(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            308 SSSVVVSGAGGPSGPGAGGVGPGRAGPGGIYGPGAGGLYGPGAGGSFGP 357
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                                                                                                                                                                                    Length 651;
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1-MAR-2003 (TrEMBLrel. 23, Last sequence update)
01-UTN-2003 (TrEMBLrel. 24, Last annotation update)
Major ampullate gland dragline silk protein-1 (Fragment).
                                                                                                                                                                               Score 162; DB 2; Length 65
Pred. No. 0.0028;
2; Mismatches 37; Indels
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Submitted (NOV-2002) to the EMBL/GenBank/DDBJ databases.
EMBL, A11410; ANBS2SOI.1;
GO; GO:0006817; C:Qupplasm; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
InterPro; IPR008160; Collagen.
NON TER
SEQUENCE 524 AA; 42492 MW; 7437FB39892422F2 CRC64;
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25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
Collagen-like triple helix repeat protein, glycine-rich.
ORFNames=FTX8470;
Bacillus cereus ZK.
                                 SEQUENCE FROM N.A.
Gatesy J.E., Hayashi C.Y.;
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                          651 AA; 52360 MW; 77CEEC8757DE48DA CRC64;
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                                                                                    EMBL; AF350264; AAK30593.1; -.
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44.0%;
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Best Local Similarity 44.v.,
37; Conservative
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brettin T.S., Bruce D., Challacombe J.F., Gilna P., Han C., Hill K.,
Hitchcock P., Jackson P., Keim P., Longmire J., Lucas S., Okinaka R.,
Hitchcock P., Jackson P., Keim P., Longmire J., Lucas S., Okinaka R.,
Richardson P., Rubin B., Tice H.;
T. Complete genome sequence of Bacillus thuringiensis 97-27.";
Submitted (JUN-2004) to the EMBL/GenBank/DDBJ databases.
REMBL, ARAT655; AAT66538.1; -.
RO, GO:0005737; C:cytoplasm; IEA.
RO; GO:0005817; P:phosphate transport; IEA.
RO; GO:0006817; P:phosphate transport; IEA.
RICHEPRO; IPR008160; Collagen.
RICHEPRO; IPR008983; TNF like.
REMBL; PPDD000; Collagen; 13.
REMPOM: PPD000; Collagen; 13.
REMPOM: PPD0000; Collagen; 13.
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STRAIN=ZK;
Brettin T.S., Bruce D., Challacombe J.F., Gilna P., Han C., Hill K.,
Hitchock P., Jackson P., Keim P., Longmire J., Lucas S., Okinaka R.,
Richardson P., Rubin E., Tice H.;
"Complete genome sequence of Bacillus cereus ZK.";
Submitted (JUL-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; CP000001; AAU16795.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                    23;
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                                                                                                                                                                                                                                                                                                                    Score 160.5; DB 2; Length 813;
Pred. No. 0.0044;
6; Mismatches 32; Indels 23.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ----SFPVAT 688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   53 ASGPGGGAPRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFAT 98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OrderedLocusNames=BT9727_3456;
Bacillus thuringiens; 8 (subsp. konkukian).
Bacteria; Firmicutes; Bacillales; Bacillaceae; Bacillus.
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                                                                                                                                                                                                                                                        813 AA; 80046 MW; 4F7AD8E04351348D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
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                                                                                                                                                                                                                                                                                                                    ch 16.7%;
1 Similarity 42.5%;
45; Conservative (
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Conservative
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Search completed: September 11, 2005, 01:42:48 Job time : 240.286 secs This Page Blank (uspto)

16, Appl 116, Appl 12312, Appl 12312, Appl 11, Appl 11, Appl 12, Appl 21, A

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ZIP: 02210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Leth, Bernard
APPLICANT: Lucas, Sophie
APPLICANT: De Smet, Charles
APPLICANT: Godelaine, Daniele
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: LL-1 TUMOR SPECIFIC GENES
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
US-09-219-849-8
US-08-642-255-80
US-08-642-246-16
US-09-642-246-16
US-09-297-256-41
US-09-297-259-41
US-09-919-497-56
US-08-919-497-56
US-08-911-212
US-08-941-211
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100.0%; Score 959; DB 2;
Best Local Similarity 100.0%; Pred. No. 1.6e-78;
Matches 180; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PILLING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461/7005
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-720-3500
TELEPAX: 617-720-2441
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERIFICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALIGNMENTS
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                                                                                                                                                           September 11, 2005, 01:30:14; Search time 66 Seconds (without alignments) 203.588 Million cell updates/sec
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Sequence 8, Al
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Sequence 7, M
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Sequence 28, Sequence 28, Sequence 27, M
Sequence 72, M
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Sequence 17, M
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Sequence 18,
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Sequence 4,
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/cgn2 6/ptodata1/jaa/5A_COMB.pep:*
/cgn2 6/ptodata1/jaa/5B_COMB.pep:*
/cgn2 6/ptodata1/jaa/6A_COMB.pep:*
/cgn2 6/ptodata1/jaa/6B_COMB.pep:*
/cgn2 6/ptodata1/jaa/BTOMB.pep:*
/cgn2 6/ptodata1/jaa/PCTUS COMB.pep:*
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Compugen Ltd.
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US-09-341-8228-9

US-09-371-7638-8

US-08-791-495-7

US-08-791-495-7

US-08-791-495-5

US-09-341-8298-2

US-09-341-8298-2

US-09-110-9288-2

US-09-110-9288-2

US-09-110-9288-2

US-09-110-9288-2

US-09-110-9288-2

US-09-110-928-1

US-08-642-255-72

US-08-642-255-72

US-08-642-255-72

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US-08-911-820-11

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US-09-331-347C-21
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                        GenCore version
Copyright (c) 1993 - 2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 180;
                                                                                                                                                                                                                                                                                         NAME: Hanson, No. 6723832man D.
REGISTRATION NUMBER: 30,946
REGISTRATION NUMBER: LUD 2166.4 CIP (09807811)
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT Leth., Bernard
APPLICANT: Leth., Bernard
APPLICANT: Leth., Bernard
APPLICANT: Leth., Charles
APPLICANT: Do Smet, Charles
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: LAGE-1 TUMOR ASSOCIATED NUCLEIC ACIDS
FILE REFERENCE: L0461/7066
CURRENT APPLICATION NUMBER: US/09/341,829A
CURRENT APPLICATION NUMBER: US 08/791,495
PRIOR APPLICATION NUMBER: PCT/US98/01445
NUMBER OF SEQ ID NOS: 14
SOFTWARE: PROSECT FROM NUMBER: PCT/US98/01445
NUMBER OF SEQ ID NOS: 14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 959; DB 4;
100.0%; Pred. No. 1.6e-78;
iive 0; Mismatches 0;
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-Oct-1998
CLASSIFICATION: 530
                                                                                                                       APPLICATION NUMBER: 09/062,422
PILING DATE: APIL1 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; SEQUENCE DESCRIPTION: SEQ ID NO: 15
US-09-165-546D-15
                                                                                                                                                                                                                                                                                                                                                                                          i: (212) 318-3000 (212) 318-3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 9, Application US/09341829A; Patent No. 6794131; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 180 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: (212) 318-3
INFORMATION FOR SEQ ID NO: 15:
                                                                                                   PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.
Matches 180; Conservative
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Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
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APPLICANT: Gure, Ali O.
APPLICANT: Gure, Ali O.
APPLICANT: Gure, Ali O.
APPLICANT: Gure, Ali O.
APPLICANT: Chen, Vao-Tseng
APPLICANT: Chen, Vao-Tseng
TITLE OF INVENTION: Therefor
TITLE OF INVENTION: Therefor
TITLE OF INVENTION: Therefor
TITLE OF ILONG DATE: 1999-09-09
CURRENT APPLICATION NUMBER: US/09/392,714A
CURRENT APPLICATION NUMBER: PCT/US98/14679
EARLIER APPLICATION NUMBER: PCT/US98/14679
SARLIER FILING DATE: 1998-07-15
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 25
LENGTH: 180
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MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage COMPUTER: IBM
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100.0%; Pred. No. 1.6e-78;
tive 0; Mismatches 0;
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ADDRESSEE: FULBRIGHT & JAWORSKI LLP
STREET: 666 Fifth Avenue
CITY: New York City
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USES THEREOF
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                                                                                                                                                                                                                                            Sequence 25, Application US/09392714A Patent No. 6686147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 15
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Best Local Similarity 100.
Matches 180; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Homo sapiens
US-09-392-714-25
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FILING DATE
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ZIP: 10103
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1 MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGGA
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APPLICANT: Chen, Yao-Tseng; Scanlan, Matthew;
APPLICANT: Gure, Ali; Old, Lloyd J.; Jager, Elke;
APPLICANT: Gure, Ali; Old, Lloyd J.; Jager, Elke;
APPLICANT: Alexander, Knuth; Drijfhout, Jan W.
TITLE OF INVENTION: ISOLATED NUCLEIC ASCITD MOLECULE
TITLE OF INVENTION: ISOLATED NUCLEIC ASCIATED ANTIGEN, THE ANTIGEN
TITLE OF INVENTION: ITSELF, AND USES THEREOF
NUMBER OF SEQUENCES:
ADDRESSEE: Fulbright & Jaworski, L.L.P.
STRET: 666 Fifth Avenue
CITY: New York
CITY: New York
CITY: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                          Sequence 30, Application US/09849602; Patent No. 6794501; Patent No. 6794501; GENERAL INFORMATION: APPLICANT: Scanlan, Matthew J. APPLICANT: Scanlan, Matthew J. APPLICANT: Chen, Yao-Teeng TITLE OF TIVENTION: Colon Cancer Antigen Panel; FILE REFERENCE: LO461/7105(JRV); CURRENT APPLICATION NUMBER: US/09/849,602; CURRENT FILING DATE: 2001-05-04; NUMBER: OF SEQ ID NOS: 30; SOFTWARE: Patent In version 3.0; SEQ ID NO 30;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
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Best Local Similarity 100.0
Matches 180; Conservative
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MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
US-09-849-602-30
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61 PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEABLARRSLAQDAPPLPVPG 120
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APPLICANT: Stockert, Elisabeth; Jager, Elke;
APPLICANT: Chen, Yao-tseng; Scanlan, Matthew;
APPLICANT: Knuth, Alexander; Old, Lloyd J.
TITLE OF INVENTION: Antibodies Which Bind to NY-ESO-1 Cancer TITLE OF INVENTION: Associated Proteins, Uses Thereof, TITLE OF INVENTION: Truncated Forms of NY-ESO-1, and HLA TITLE OF INVENTION: Binding Peptides Derived Therefrom NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
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Pred. No. 5.6e-78;
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CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

PAPLICATION NUMBER: US/08/937,263B
FILING DATE: September 15, 1997
PRIOR APPLICATION NUMBER: 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORWATION:

NAME: Sinn, Eric, Patent Agent
REGISTRATION NUMBER: LUD 5466.1
FELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

SEQUENCE CHRACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/751,798
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APPLICATION NUMBER: 08/725,182
FILING DATE: October 3, 1996
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APPLICATION NUMBER: 09/062,422
FILING DATE:
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OPERATING SYSTEM: PC-DOS
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Best Local Similarity 99.4
Matches 179; Conservative
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            amino acid
3Y: linear
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ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
               84.9%;
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Best Local Similarity 84.4%
Matches 152; Conservative
             Query Match
Best Local Similarity 94.4%
Matches 152; Conservative
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US-09-341-829A-7
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US-09-341-829A-7
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LENGTH: 180
TYPE: PRT
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US-08-791-495-5
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Pred. No. 5.6e-78;
0; Mismatches 1; Indels
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DDS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Leth, Bernard
APPLICANT: Locas, Sophie
APPLICANT: De Smet, Charles
APPLICANT: Godelaine, Daniele
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
ITILE OF INVENTION: LL-1 TUMOR SPECIFIC GENES
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
STREET: 600 Atlantic Avenue
           NAME: Hangon, No. 6525177man D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: 1UD 5466.3
TELECOMMUNICATION INPORMATION:
TELEPRONE: (212) 318-3168
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461/7005
TELECOMMUNICATION INFORMATION:
TELEPHONE: 617-720-3500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7, Application US/08791495
Patent No. 5811519
GENERAL INFORMATION:
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Best Local Similarity 99.4%;
Matches 179; Conservative
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INFORMATION FOR SEQ ID NO: 7:
ATTORNEY/AGENT INFORMATION:
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LENGTH: 180 amino acids
TYPE: amino acid
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CLASSIFICATION: 435
                                                                                                                                                                                ; TYPE: amino acid
; TOPOLOGY: linear
US-09-751-798-8
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                                                                                                                                                               LENGTH:
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61 PRGPHGGAASAQDGRCPCGARRPDSRLLQLHITMPFSSPMEAELVRRILSRDAAPLPRPG 120
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84.4%; Pred. No. 1.6e-65;
ive 13; Mismatches 15; Indels
; Score 814; DB 2; Length 180; ; Pred. No. 1.6e-65; 13; Mismatches 15; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Leth, Bernard
APPLICANT: Leth, Bernard
APPLICANT: Leth, Charles
APPLICANT: Godelaine, Daniele
CURRENT BERENCE: L0461/7066
CURRENT APPLICATION NUMBER: US 09/341,829A
CURRENT FILING DATE: 1999-10-18
PRIOR APPLICATION NUMBER: US 08/791,495
PRIOR APPLICATION NUMBER: PCT/US98/01445
ALIER APPLICATION NUMBER: PCT/US98/01445
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Sequence 5, Application US/08791495

GENERAL INFORMATION:
APPLICANT: Leth, Bernard
APPLICANT: Locas, Sophie
APPLICANT: Boon-Fallen, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: Li-1 TUMOR SPECIFIC GENES
NUMBER OF SEQUENCES: 14

CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 14
SOFTWARE: FastSEQ for Windows Version 3.0
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PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG 120
                                                                                                              508 dPGGFGGFGGFGGPGGAGGPYGPGG-AGGPYGPGGAGGPYGPGGAGG--PYGPGGAGGPY 564
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                                                      1 MOAEGOGTGGSTGDADGPGGPGTPDGPGGNAGGPGEAGATGGRGPRGAARASGPRGGA
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                                                                                                                                                                                                                                                                                Sequence 28, Application US/09010928B

Patent No. 5994099

GENERAL INFORMATION:
APPLICANT: Lewis, Randolph V
APPLICANT: Hayashi, Cheryl Y
ITILE OF INVENTION: EXTREMELY ELASTIC SPIDER SILK PROTEIN AND DNA
ITILE OF INVENTION: CODING THEREFOR
NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
STREET: 8110 GATEHOUSE RD. SUITE 500E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/09010928B
Patent No. 5994099
GENERAL INFORMATION:
APPLICANT: Lewis, Randolph V
APPLICANT: Hayashi, Cheryl Y
ITILE OF INVENTION: EXTREMELY ELASTIC SPIDER SILK PROTEIN AND DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ..
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/010,928B FILING DATE: 22-JAN-1998 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                 STREET: BIRCH, STEWART, KOLASCH & BIRCH STREET: 8110 GATEHOUSB RD. SUITE 500E CITY: FALLS CHURCH STATE: VIRGINIA COUNTRY: UNTTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      565 GPGGAGGSYGLGGAGGSGGVGP 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
CMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                  :||:||||||:| : |
121 AVLKDFTVSGNLLFMSVRDQD 141
                                                                                                                                                               121 VLLKEFTVSGNILTIRLTAAD 141
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: Murphy Jr., Gerald M
REGISTRATION NUMBER: 28977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 1.
INFORMATION FOR SEQ ID NO: 28:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 745 amino acids
amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 52.4;
Matches 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; MOLECULE TYPE: protein US-09-010-928B-28
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                                                                                                                                                                                                                                                                         US-09-010-928B-28
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US-09-010-928B-2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 MQAEGOGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPRGGA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61.4%; Score 589; DB 4; Length 210; 76.6%; Pred. No. 2.6e-45; Live 15; Mismatches 18; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18; Indels
                                                                                                                                                    CURRENT APPLICATION DATA:

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION NUMBER: U$/08/791,495

FILING DATE: Van AMBER: U$/08/791,495

ATTORNEY/AGENT INFORMATION:

REGISTRATION NUMBER: 40,212

REFERENCE/DOCKET NUMBER: L0461/7005

TELEPAATON NUMBER: 40,212

REFERENCE/DOCKET NUMBER: L0461/7005

TELEPAATON NUMBER: 1720-2441

INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS:

LENGTH: 210 amino acids

TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 589; DB 2;
Pred. No. 2.6e-45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15; Mismatches
                                                                                                     MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 VLLKEFTVSGNILTIRLTAAD 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-341-829A-5; Sequence 5, Application US/09341829A; Patent No. 6794131
600 Atlantic Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61.4%;
76.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity 76.64
Matches 108; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 76.6*
Matches 108; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-791-495-5
                                                                 ZIP: 02210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM: Homo sapiens
                              MA
USA
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3 AEG-RGTGGSTGD----ADGPGGPG
                                                                TELEPHONE: (415) 494-8700
TELEFAX: (415) 494-8771
TELEX: 910 277299 FHT UR
INFORMATION FOR SEQ ID NO: 73:
SEQUENCE CHARACTERISTICS:
LENGTH: 633 amino acids
                                                FELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 4 Embarcadero
CITY: San Francisco
STATE: California
COUNTRY: USA
                                                                                                                                                                                  TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: protein
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STRANDEDNESS: si
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 94111-4187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-08-642-255-72
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 73, Application US/08642255
; Sequence 73, Application US/08642255
; Patent No. 5773249
; GENERAL INFORMATION:
APPLICANT: CARPELLO, Joseph
APPLICANT: FERRARI, Franco A.
TITLE OF INVENTION: High Molecular Weight Collagen-Like
TITLE OF INVENTION: High Molecular Weight Collagen-Like
TITLE OF INVENTION: Protein Polymers
NUMBER OF SEQUENCES: 135
CORRESPONDENCE ADDRESS:
ADDRESSER: FLEHR, HOHBACH, TEST, ALBRITTON & HERBERT
STREET: A Embarcadero Center, Suite 3400
CITY: San Francisco
STREET: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 16.7%; Score 160; DB 2; Length 870; Best Local Similarity 52.4%; Pred. No. 3.3e-06; Matches 43; Conservative 1; Mismatches 32; Indels
                                                                                                                                              SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/642,255
TITLE OF INVENTION: CODING THEREFOR NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS: ADDRESSE: BIRCH, STEWART, KOLASCH & BIRCH STEET: BILL GATEHOUSE RD. SUITE 500E CITY: FALLS CHURCH STATE: VIRGINIA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: ROWLAND, Bertram 1.
REGISTRATION NUMBER: 20,015
REFERENCE/DOCKET NUMBER: 455556-3/BIR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             691 GPGGAGGSYGLGGAGGSGGVGP 712
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : 870 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
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                                                                                                        ---IPDGPGGNAGGPGEAGATGGRG 44
                                                    Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31;
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DB 1; Length 633;
                                              24; Indels
                                                                                                                                                                                                                                                                                                                                                                          Sequence 72, Application US/08642255
Patent No. 5773249
GENERAL INFORMATION:
APPLICANT: CAPPELLO, Joseph
APPLICANT: CAPPELLO, Tranco A.
TITLE OF INVENTION: High Molecular Weight Collagen-Like
TITLE OF INVENTION: Protein Polymers
VUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
ADDRESSEE: FLEHR HOHBACH, TEST, ALBRITTON & HERBERT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                               45 PRG----AGAARASGPGGGAPRGPHGGAASGLNGCCRCGARGP 83
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E: FLEHR, HOHBACH, TEST, ALBRITTON & HERBERT 4 Embarcadero Center, Suite 3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER REALBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FO Compatible
OPERATING SYSTEM: FC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/642,255
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 16.3%; Score 156.5; DB 1; Best Local Similarity 41.7%; Pred. No. 8.6e-06; Matches 43; Conservative 5; Mismatches 24;
Query Match 16.3%; Score 156.5; DB 1 Best Local Similarity 41.7%; Pred. No. 4.8e-06; Matches 43; Conservative 5; Mismatches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CIASSIPICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: ROWLAND, Bertram I
REGISTRATION NUMBER: 20,015
REGISTRATION NUMBER: 20,015
TELEPHONE: (415) 494-870
TELEPHONE: (415) 494-871
TELEPHONE: (415) 494-871
TELEPHONE: (415) 494-871
TELER: 910 277299 FHT UR
INFORMATION FOR SEQ ID NO: 72:
SEQUENCE CHARACTERISTICS:
LENGTH: 1065 amino acids
```

ò	3 AEG-REGESTEGDAEGPEGEPGIPDGPGFGEAGATGGRG 44
q	215 AQGPAGPGGSRGDPGPPGAGPGGSRGDPGPPGAQGPAGPGGSRGDPGPPGAHGPAG 274
ò	45 PRGAGAARASGPGGGAPRGPHGGAASGLNGCCRCGARGP 83
qα	
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September 11, 2005, 01:43:05; Search time 243.429 Seconds (without alignments) 291.657 Million cell updates/sec
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                                                                                                                                                                                                                                                                                                                                                          US-09-529-206E-4
959
1 MQAEGRGTGGSTGDADGPGG.......WITQCFLPVFLAQPPSGQRR 180
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| Cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US07_NEW_PUB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US08_NEW_PUB.ppp:*
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| Cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.ppp:*
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| Cgn2_6/ptodata/1/pubpaa/US10_PUBCOMB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.ppp:*
| Cgn2_6/ptodata/1/pubpaa/US11_NEW_PUB.ppp:*
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1777461 segs, 394431504 residues
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Published_Applications_AA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 08
Maximum Match 1008
Listing first 45 summaries
                                                                                                                                            OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Scoring table:
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	Description	Sequence 30, Appl	Sequence 71, Appl	Sequence 3, Appli		Sequence 386, App	Sequence 832, App		Sequence 11, Appl	Sequence 15, Appl	Sequence 74, Appl	Sequence 11, Appl
	ID	US-09-849-602-30	US-10-207-655-71	US-10-026-066-3	US-10-117-937-74	US-10-295-027-386	US-10-296-734-832	US-10-188-832-139	US-10-777-053-11	US-10-751-088-15	US-10-657-022-74	US-10-837-217-11
	ВВ	101	14	12	15	15	15	15	16	16	16	16
	Match Length DB	180	180	180	180	180	180	180	180	180	180	180
<b>,</b>	Match	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Score	959	959	959	959	959	959	959	959	959	959	959
11,000	No.		7	m	4	5	9	7	80	6	10	11

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Sequence 74, Application US/10117937
; Sequence 74, Application US/10117937
; Publication No. US20030220239A1
; GENERAL INFORMATION:
APPLICANT: CIL IMMUNO THERAPIES CORP.
APPLICANT: DIAMOND, David, C.
APPLICANT: LIU, Liping
APPLICANT: LIE, Zhidong
TITLE OF INVENTION: EPITOPE SEQUENCES
TITLE OF INVENTION: EPITOPE SEQUENCES
TITLE REFERENCE: CTLIMM.027A
CURRENT APPLICATION NUMBER: US 60/282,211
PRIOR FILING DATE: 2001-04-06
PRIOR FILING DATE: 2001-11-07
PRIOR FILING DATE: 2001-11-07
PRIOR FILING DATE: 2001-11-07
PRIOR FILING DATE: 2001-11-07
PRIOR FILING DATE: 2001-03-07
NUMBER OF SEQ ID NOS: 602
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 74
LENGTH: 180
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; Sequence 386, Application US/10295027
; Publication No. US20030232350A1
; GENERAL INFORMATION:
; APPLICANT: Afar, Daniel
; APPLICANT: Ginaberg, Wendy M.
; APPLICANT: Ginaberg, Wendy M.
; APPLICANT: Gish, Kurt C.
; APPLICANT: Gish, Kurt C.
; APPLICANT: Hevezi, Peter A.
; APPLICANT: Mack, David H.
; APPLICANT: Marray, Richard
; APPLICANT: Watson, Susan R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , ORGANISM: Homo sapiens
US-10-117-937-74
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VLLKEFTVSGNILTIRLTAADHRQLQLSISSCLQQLSLLMWITQCFLPVFLAQPPSGQRR 180
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                                                                                                                                                     Sequence 71, Application US/10207655
Publication No. US2030118592A1
Sequence 71, Application US/10207655
Publication No. US2030118592A1
GENERAL INFORMATION:
APPLICANT: Ledbetter, Jeffrey A.
APPLICANT: Hayden-Ledbetter, Martha S.
TITLE OF INVENTION: BINDING DOWAIN-IMMUNOGLOBULIN FUSION PROTEINS
FILE REPERENCE: 390069-401C1
CURRENT APPLICATION NUMBER: US/10/207,655
CURRENT PILING DATE: 2002-07-25
NUMBER OF SEQ ID NOS: 426
SOFTWARE: Patentin version 3.0
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| Publication No. US20030218425A1
| GENERAL INFORMATION:
| APPLICANT: Simard, John J. L. |
| APPLICANT: Simand, David C. |
| TITLE OF INVENTION: PRESENTING CELLS
| TITLE OF INVENTION: PRESENTING CELLS
| TITLE OF INVENTION: PRESENTING CELLS
| FILE REFERENCE: CTLIMM.12.CPIC
| CURRENT APPLICATION NUMBER: US/10/026,066
| CURRENT APPLICATION NUMBER: 09/561,074
| PRIOR APPLICATION NUMBER: 09/561,074
| PRIOR FILING DATE: 2000-04-28
| PRIOR APPLICATION NUMBER: 09/561,571
| PRIOR FILING DATE: 2000-04-28
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Best Local Similarity 100.0
Matches 180; Conservative
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US-10-207-655-71
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US-10-026-066-3
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1 MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAGAARASGPGGAA
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Mismatches
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                                                                  Query Match 100.
Best Local Similarity 100.
Matches 180; Conservative
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Best Local Similarity 100.
Matches 180; Conservative
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ORGANISM: Homo sapiens
                 US-10-296-734-832
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US-10-777-053-11
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SEQ ID NO 139
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APPLICANT: Eos Biotechnology, Inc.
TITLE OF INVENTION: Methods of Diagnosis of Cancer, Compositions and
TITLE OF INVENTION: Methods of Screening for Modulators of Cancer
FILE REFERENCE: 018501-01250008
CURRENT PILING DATE: 2002-11-13
CURRENT APPLICATION NUMBER: US/10/295,027
CURRENT FILING DATE: 2000-09-15
PRIOR PILING DATE: 2000-09-15
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-13
PRIOR FILING DATE: 2001-11-15
PRIOR FILING DATE: 2001-11-15
PRIOR FILING DATE: 2001-11-29
PRIOR FILING DATE: 2001-11-29
PRIOR FILING DATE: 2001-11-29
PRIOR PELICATION NUMBER: US 60/334,393
PRIOR FILING DATE: 2001-11-29
PRIOR PELICATION NUMBER: US 60/347,349
PRIOR FILING DATE: 2001-12-14
PRIOR FILING DATE: 2002-01-10
PRIOR PELICATION NUMBER: US 60/347,349
PRIOR PELICATION NUMBER: US 60/347,349
PRIOR PELICATION NUMBER: US 60/355,250
PRIOR APPLICATION NUMBER: US 60/355,250
PRIOR APPLICATION NUMBER: US 60/355,250
PRIOR APPLICATION NUMBER: US 60/355,250
PRIOR PELICATION NUMBER: US 60/355,250
PRIOR FILING DATE: 2002-02-01-10
PRIOR FILING DATE: 2002-02-01-10
PRIOR FILING DATE: 2002-02-03
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Publication No. US20040054137A1
GENERAL INFORMATION:
GENERAL THORMATION:
TITLE OF INVENTION:
FILE REPERENCE: Savine
CURRENT APPLICATION NUMBER: US/10/296,734
CURRENT FILING DATE: 2003-08-04
FRIOR PELING DATE: 2000-05-26
NUMBER OF SEQ ID NOS: 1507
SOFTWARE: PatentIn version 3.2
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ORGANISM: Artificial
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LENGTH: 180
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is Sequence 139, Application US/10188832

is Sequence 139, Application US/10188832

is Publication No. US20040076955A1

is GENERAL INFORMATION:

A APPLICANT: Mack, David H.

A APPLICANT: Aziz, Natasha

TITLE OF INVENTION: Methods of Diagnosis of Bladder Cancer, Compositions

TITLE OF INVENTION: and Methods of Screening for Modulators of Bladder

TITLE OF INVENTION: and Methods of Screening for Modulators of Bladder

TITLE OF INVENTION: Cancer

TITLE OF INVENTION: Cancer

TITLE OF INVENTION: Cancer

TITLE OF INVENTION WHERE: US/10/188,832

CURRENT FILING DATE: 2001-01-03

PRIOR APPLICATION NUMBER: US 60/310,099

PRIOR FILING DATE: 2001-08-03

PRIOR FILING DATE: 2001-11-08

PRIOR FILING DATE: 2001-11-08

PRIOR FILING DATE: 2001-11-13

PRIOR APPLICATION NUMBER: US 60/330,666

PRIOR APPLICATION NUMBER: US 60/330,666

PRIOR FILING DATE: 2001-11-13

PRIOR FILING DATE: 2001-11-13

PRIOR FILING DATE: 2001-11-13

PRIOR FILING DATE: 2001-11-13

PRIOR FILING DATE: 2002-04-12

NUMBER: US 60/372,246
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100.0%; Pred. No. 1.8e-67;
ative 0; Mismatches 0;
Score 959; DB 15;
Pred. No. 1.8e-67;
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61 PRGPHGGAASGINGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG 120
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                                                      NAME: Hanson, Norman D.
REGISTRATION NUMBER: 30,946
REGISTRATION NUMBER: 10,946
REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
INFORMATION FOR SEQ 1D NO: 15:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 74, Application US/10657022
Publication No. US20040180354A1
GENERAL INFORMATION:
APPLICANT: Simard, John J. L.
APPLICANT: Diamond, David C.
APPLICANT: Liu, Liping
APPLICANT: Liu, Zheng
CURRENT APPLICATION WUMBER: US/10/657,022
CURRENT FILING DATE: 2002-09-04
PRIOR APPLICATION NUMBER: 60/409123
PRIOR APPLICATION NUMBER: 60/409123
                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear SEQUENCE DESCRIPTION: SEQ ID NO: 15 US-10-751-088-15
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SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                      LENGTH: 180 amino acids TYPE: amino acid
                                   ATTORNEY/AGENT INFORMATION:
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US-10-657-022-74
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US-10-657-022-74
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LENGTH: 180
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US-10-751-088-15
US-10-751-088-15
Sequence 15, Application US/10751088
Sequence 15, Application No. US20040158044A1
Sequence 15, Application No. US2004015804A1
SENERAL INFORMATION:
GENERAL INFORMATION:
GUTE, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
APPLICANT: Simard, John J. L.
APPLICANT: Diamond, David C.
APPLICANT: Diamond, David C.
APPLICANT: Diamond, David C.
APPLICANT: Diamond, David C.
APPLICANT: Lei, Xing-Dong
TITLE OF INVENTION: EXPRESSION VECTORS ENCODING EPITOPES OF
TITLE OF INVENTION: TARGET-ASSOCIATED ANTIGENS AND METHODS FOR THEIR DESIGN
FILE REFERENCE: MANNK.022C1
CURRENT APPLICATION NUMBER: US/10/77,053
FILE REPLIANTON NUMBER: 10/292,413
PRIOR PILING DATE: 2002-11-07
PRIOR FILING DATE: 2001-11-07
NUMBER OF SEQ ID NOS: 979
SOFTWARE FREE PRETEXEQ for Windows Version 4.0
SEQ ID NO 11
LENGTH: 180
SEQ ID NO 11
TYPE: PRI CALLOR OF SEQ ID NOS: 979
SEQ ID NO 11
SERVICE SEQ ID NOS: 979
SEQ ID NO 11
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APPLICATION NUMBER: US/10/751,088
FILING DATE: 02-Jan-2004
CLASSIFICATION: 530
PRIOR APPLICATION: 530
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100.0%; Pred. No. 1.8e-67;
iive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
STREET: 666 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
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Best Local Similarity 100.
Matches 180; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: Homo Sapien
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1 MQAEGRGTGGSTGDADGPGGPGIPDGPGGNAGGPGEAGATGGRGPRGAAAASGPGGGA
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SOFTWARE: Patentin version 3.2
SEQ ID NO 1270
LENCTH: 180
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Best Local Similarity 100.
Matches 180; Conservative
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US-10-723-860-1270
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                            Sequence 11, Application US/10837217

Sequence 11, Application US/20040203051A1

GENERAL INFORMATION:

APPLICANT: Simard, John J. L.

APPLICANT: Diamond, David C.

APPLICANT: Qiu, Zilyong

TITLE OF INVENTION: EXPRESSION VECTORS ENCODING EPITOPES OF

TITLE OF INVENTION: TARGET-ASSOCIATED ANTIGENS AND METHODS FOR THEIR DESIGN

FILE REFERENCE: MANNK, 022C2

CURRENT FILING DATE: 2004-04-30

PRIOR PILING DATE: 2004-04-30

PRIOR PILING DATE: 2001-11-07

PRIOR PILING DATE: 2001-11-07

NUMBER OF SEQ ID NOS: 979

SOUTHWARE FELING DATE: 2001-11-07

NUMBER OF SEQ ID NOS: 979

SOUTHWARE FREISED FOR Windows Version 4.0
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| Sequence 9, Application US/10877373
| Publication No. US20004023451A1
| GENERAL INFORMATION:
| APPLICANT: Leth., Bernard
| APPLICANT: Leth., Charles
| APPLICANT: Besser, Charles
| APPLICANT: Godelaine, Danniele
| APPLICANT: Boon-Falleur, Thierry
| TITLE OF INVENTION: LAGE-1 TUNOR ASSOCIATED NUCLEIC ACIDS
| FILE REPERBNES: LO461/7066
| CURRENT FILING DATE: 1999-10-18
| PRIOR APPLICATION NUMBER: US/09/341,829
| PRIOR PILING DATE: 1999-10-18
| PRIOR APPLICATION NUMBER: US 08/791,495
| PRIOR APPLICATION NUMBER: PCT/US98/01445
| NUMBER OF SEQ ID NOS: 14
| SOFTWARR: FastSEQ for Windows Version 3.0
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100.0%; Score 959; DB 16;
Best Local Similarity 100.0%; Pred. No. 1.8e-67;
Matches 180; Conservative 0; Mismatches 0;
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US-10-877-373-9
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US-10-837-217-11
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LENGTH: 180
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Sequence 1270, Application US/10723860

Publication No. US20040253606A1

Publication No. US20040253606A1

GENERAL INFORMATION:
APPLICANT: Aziz, Natasha

APPLICANT: Ginsburg, Wendy M.
APPLICANT: Ginsburg, Mendy M.
APPLICANT: Zlotnik, Albert

TITLE OF INVENTION: Methods of Diagnosis of Soft Tissue Sarcoma, Compositions () TITLE OF INVENTION: Methods for Screening for Soft Tissue Sarcoma Modulators FILE REFERENCE: 05882.0193.NPUS01

CURRENT APPLICATION NUMBER: US/10/723,860

CURRENT FILING DATE: 2002-11-26

PRIOR FILING DATE: 2002-11-26
                                                                                                                                                                                                                           Sequence 7, Application US/10871708
Publication No. US20050118186A1
GENERAL INFORMATION:
APPLICANT: Chiang, Chih.Sheng
TITLE OF INVENTION: COMBINATIONS OF TUMOR-ASSOCIATED
TITLE OF INVENTION: ANTIGENS IN COMPOSITIONS FOR VARIOUS TYPES OF CANCERS
FILE REFERENCE: MANNK.035A
CURRENT APPLICATION NUMBER: US/10/871,708
CURRENT FILING DATE: 2004-06-17
PRIOR PELICATION NUMBER: 60/479,554
PRIOR FILING DATE: 2003-06-17
PRIOR FILING DATE: 2003-06-17
SEQ ID NOS: 18
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                             61 PRGPHGGAASGLNGCCRCGARGPESRLLEFYLAMPFATPMEAELARRSLAQDAPPLPVPG 120
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100.0%; Pred. No. 1.8e-67;
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    Length 180;
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APPLICANT: Simard, John J. L.

APPLICANT: Simard, John J. L.

APPLICANT: Lei, Xiang-Dong

APPLICANT: Lei, Xiang-Dong

APPLICANT: Lei, Xiang-Dong

APPLICANT: Lei, Xiang-Dong

TITLE OF INVENTION: EPITOPE SYNCHRONIZATION IN ANTIGEN

TITLE OF INVENTION: EPITOPE SYNCHRONIZATION IN ANTIGEN

TILE REFERENCE: MANNK, 021CPLCI

CURRENT APPLICATION NUMBER: US/10/895,523

CURRENT APPLICATION NUMBER: 10/026,066

PRIOR FILING DATE: 2001-12-07

PRIOR FILING DATE: 2001-12-07

PRIOR FILING DATE: 2000-04-28

PRIOR FILING DATE: 2000-04-28
Query Match 100.0%; Score 959; DB 17; Best Local Similarity 100.0%; Pred. No. 1.8e-67; Matches 180; Conservative 0; Mismatches 0;
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Publication No. US20050130920A1
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Adm72815 1 Adm73418 Adm73417 1 Adg18451 1 Adg10446 Aae13122 1 Aau85105

Human Human

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The present sequence represents a cancer peptide that is based on amino acid residues 44-62 of human ESO-1/CMG-3 (or CMG-3) ORF1 (see AAY05965), a new and potent tumour antigen capable of eliciting an antigen specific immune response by T cells, Cancer peptides derived from CMG-3 ORF1, CMG-3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-87), are useful as cancer vaccines that protect against cancer. The invention provides: vectors and host cells (also useful as vaccines); a method of diagnosis of cancer or precancer; a transgenic animal, antisense oligonucleotides that inhibit expression of the cancer peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NY ESO-1/CAG-3 gene; CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metaetsais; melanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
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(c) 1993 - 2005 Compugen Ltd.
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Add35568 B Add35568 B Add25510 B Adn39068 Add34139 B

ADD25510 ADN39068 ADJ54139

100.0 100.0 100.0 0.001

ADD35568

ABR83438 ADC09576

80

Score

Result

Human NY

Abr83438

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Misc-difference 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cancer associated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                      AAW62584;
                                                                                                                                                                                                                                Query Match
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                                                                                                                                                                                                                                                         Matches
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or tumour antigen; antibodies reacting with a CAG-3 cancer peptide, useful in diagnostic and detection assays; and methods for preventing or inhibiting cancer by administering a cancer peptide, with or without an HLA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, panoreatic and thyroid cancers. Melanoma is treated by inducing cancer-specific T cells in vitro for subsequent return to a
                                                                                                                                                                                                                                                                                                                                                                                                                               epitope liberation; substrate; proteasome; cytostatic; antibacterial; protozoacide; fungicide; T-cell activator; vaccine; housekeeping epitope; cytotoxic T lymphocyte; CTL; adoptive immunotherapy, neoplastic cell; virus; bacterium; protozoan; fungus; housekeeping proteasome system;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This invention relates to a novel method of identifying a polypeptide suitable for epitope liberation, including the steps of identifying an epitope of interest; providing substrate polypeptide sequence including the epitope, wherein the substrate permits processing by a proteasome; contacting the substrate with a composition including the proteasome, under conditions that support processing of the substrate by proteasome, and assaying for liberation of epitope. The invention may be useful for the development of compounds with a cytostatic, antibacterial, protezoacide or fungicide activity acting as T-cell activators. In
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Identifying polypeptide suitable for epitope e.g., housekeeping epitope, liberation by contacting substrate polypeptide comprising epitope of interest, with proteasome, and assaying for liberation of epitope.
                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                       ö
                                                                                                                                                                             Score 107; DB 2; Length 20; Pred. No. 9.6e-06;
                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                      Epitope liberation-related NY-ESO-1 protein SegID11.
                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lei X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 2; SEQ ID NO 11; 67pp; English.
                                                                                                                                                                                                                                                                                                                         ADK68648 standard; protein; 179 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Qiu Z,
                                                                                                                                                                                                                                                  RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                                                                1 RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                             100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-NOV-2002; 2002US-00292413.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-NOV-2001; 2001US-0336968P.
                                                                                                                                                                                           100.08;
                                                                                                                                                                                                                                                                                                                                                                             06-MAY-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simard JJL, Diamond DC,
                                                                                                                                                                                      Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SIMA/) SIMARD J J L.
(DIAM/) DIAMOND D C.
(QIUZ/) QIU Z.
(LEIX/) LEI X.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2004-167209/16.
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                                                                                                                                                   Sequence 20 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
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                                                                                                                                                                             Query Match
                                                                                                                          patient
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Matches
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addition, the invention may allow development of a vaccine. The invention is useful for identifying a polypeptide suitable for epitope libration, where the epitope is a housekeeping epitope. The compositions comprising the identified housekeeping epitopes are useful in vitro in vaccine development or in the generation or expansion of cytotoxic T lymphocyte (CTL) to be used in adoptive immunotherapy. The invention is also useful for activating T-cells against neoplastic cells, and cells infected with virus, bacterium, protozoan or fungus. CTL epitopes are identified based on the knowledge that such epitopes are, in fact, produced by the housekeeping proteasome system. Once identified, these epitopes, embodied as peptides, can be used to successfully immunise or induce therapeutic TL responses against housekeeping proteasome expressing target cells in the method of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 179;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      note= "potential myristorylation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "potential phosphorylation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'note= "potential myristorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note= "potential phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               note= "potential phosphorylation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     note= "potential phosphorylation
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 107; DB 8;
Pred. No. 7.3e-05;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cancer associated antigen NY-ESO-1.
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100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 100.
Les 20; Conservative
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N-PSDB; AAV38566.
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Fig 3; 49pp; English.
 Claim 8;
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The present sequence represents a cancer associated antigen. The clone from which the DNA sequence is obtained is designated NY-ESO-1. The specification described a method for determining regression, progression of onset of a cancerous condition, comprising monitoring a sample from a patient with the cancerous condition, for a parameter selected from NY-ESO-1 protein, a peptide derived from NY-ESO-1 protein and cytolytic T cells specific for the peptide and an MHC molecule with which it non-covalently complexes. Methods for the treatment of a cancerous condition are also described. The NY-ESO-1 protein and peptides derived from it can be used for diagnosis and treatment of cancers and to monitor the efficacy of a therapeutic regime Sequence 180 AA;

100.0%; Score 107; DB 2; 100.0%; Pred. No. 7.3e-05; ive 0; Mismatches 0; 1 RGPRGAGAARASGPGGGAPR 20 43 RGPRGAGAARASGPGGGAPR 62 100.08; Local Similaricy hes 20; Conservative Query Match Matches

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Gaps

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Length 180; Indels

Human NY-ESO-1 protein sequence, formerly known as LL-1.2 clone. AAW69665 standard; protein; 180 AA. (first entry) 27-OCT-1998 AAW69665; RESULT 4

Human; LAGE-1; tumour associated protein; LL-1; diagnosis; tumour. 98WO-US001445. Homo sapiens. WO9832855-A1 27-JAN-1998; 30-JUL-1998 

Godelaine D, De Smet C, (LUDW-) LUDWIG INST CANCER RES Lucas S, Lethe B,

97US-00791495.

27-JAN-1997;

Boon-Falleur T;

New isolated LAGE-1 tumour associated nucleic acids - used to develop products for the diagnosis and treatment of LAGE-1 associated disorders, WPI; 1998-427951/36. N-PSDB; AAV50348.

Example 2; Page 57-58; 73pp; English.

particularly tumours.

The present sequence represents human NY-ESO-1, formerly known as Li-1.2 clone, which is used in an example from the present invention which describes LAGE-1 tumour associated protein (TAP). The present invention also describes: (1) a method for treating a subject with a disorder characterised by expression of a LAGE-1 nucleic acid molecule or an expression product, comprising administering to the subject autologous cytolytic T cells to ameliorate the disorder, where the cytolytic T cells for complexes of an HLA molecule and a LAGE-1 TAP or an immunogenic fragment; (2) a method for treating a subject with a disorder characterised by expression of a LAGE-1 uncleic acid molecule or an expression product, comprising administering a LAGE-1 TAP or an immunogenic fragment to ameliorate the disorder; and (3) a method for

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The present sequence represents the ORF1 protein encoded by open reading frame 1 of the human ESO-1/CAG-3 (or CAG-3) gene. CAG-3 is a new and protein tumour antigen capable of eliciting an antigen specific immune response by T calls. Cancer peptides comprising ORF1, ORF2 (see AAY05966), portions of these peptides and their variants (see AAY05965-87), are useful as cancer vectines that proteic the recipient from development of cancer. The invention provides: vectors and host cells (also useful as vaccines); a method of diagnosis of cancer or precancer; a transgenic animal; antiennes oligonucleotides that inhibit expression of the cancer peptide or tumour antigen; antibodies reacting with the CAG-3 cancer peptide, useful in diagnostic and detection assays; and methods of the cancer peptide. The cancer peptide, cancer peptide, useful in diagnostic and detection assays; and methods of the cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer,
                                                                                                                                                                                                                                                         ö
selectively enriching a population of T cells with cytolytic T cells specific for a LAGE-1 TAP comprising contacting an isolated population of T cells with an agent presenting a complex of a LAGE TAP or an immunogenic fragment and a HLA presenting molecule to selectively enrich the isolated population of T cells with the cytolytic T cells. The methods and products from the present invention can be used for the diagnosis and treatment of LAGE-1 associated disorders, particularly
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NY ESO-1/CAG-3 gene; CAG-3 gene; cancer antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; malanoma; adenocarcinoma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; parcreatic cancer; liver cancer; tumour; diagnosis; immunotherapy; therapy; vaccine; ORFI.
                                                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                  Length 180;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human cancer antigen NY ESO-1/CAG-3 ORF1 protein.
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                                                                                                                                                                                                              Score 107; DB 2;
Pred. No. 7.3e-05;
                                                                                                                                                                                                                                                     Mismatches
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                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                             1 RGPRGAGAARASGPGGGAPR
                                                                                                                                                                                                                                                                                                                                  43 RGPRGAGAARASGPGGGAPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Cancer antigen NY ESO1/CAG-3.
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Best Local Similarity
Local Similarity
Local Conservative
Local 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1999-277270/23.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAX58599.
                                                                                                                                                                          Sequence 180 AA;
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This sequence represents a human tumour antigen, NY-ESO-1, the CDNA encoding which was isolated from an oesophagus squamous cell cancer cDNA library. Tissue localisation studies revealed it to be expressed at high levels in normal ovary and testis but not in normal colon, kidney, liver, brain, oesophagus and skin. It was expressed in certain tumours and tumour cell lines with some degree of frequency - these included melanoma specimens and cell lines, and breast and bladder cancer specimens, with expression in other tumour types baing sporadic. Peptides derived from NY ESO-1 are bound by both MHC (major histocompatibility complex) Class I can class II molecules for presentation to T-cells. Peptides AAY52431-CY52434 bind to Class I HIA-AZ molecules, thereby stimulating proliferation of cytotoxic T-cells, while peptides AAY52435-Y52440 bind to class II HIA-DRS3 molecules, than while peptides and proliferation. The peptides derived from NY-BSO-1 may be used in methods and cancers compositions used for the treatment, diagnosis and prevention of cancers (such as melanoma, breast cancer, prostate cancer, lung cancer, hepatoma,
                                                                                                                                                                                                                                                          .153 " "Peptide presented by MHC Class I HLA-A24 and HLA-
           'note= "Peptide presented by MHC Class I HLA-B7 and HLA-
                                                                                                                                                                                                                                                                                                                                                                                                              "Peptide (AAY52434) presented by MHC Class I HLA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Novel peptides which bind to MHC class I and MHC class II molecules, useful for therapeutic and diagnostic purposes.
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                                                                                                                                                                                HLA-A24"
                                                                                                                                                                                                                                                                                                        .162
:= "Peptide presented by MHC Class I HLA-B52"
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3= "Peptide presented by MHC Class I HLA-B52"
                                                                                                                                                  "Peptide presented by MHC Class I HLA-B52"
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                                                                                                                    HLA-B35"
                                                                                                                                                                                                            "Peptide presented by MHC Class I HLA-B8"
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/note= "Peptide presented by MHC Class I HLA-A3"
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                                                      HLA-B7"
                                                                                                                                                                                                                                          "Peptide presented by MHC Class I HLA-B7"
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                                                                                                                                                                       note= "Peptide presented by MHC Class I
38. .147
                                                                                                                  "Peptide presented by MHC Class I
                                                       Class
                                                                                       Class
                                                       by MHC
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                                                       presented
                                                         "Peptide
                                                                                       "Peptide
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98US-00165546.
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Ritter G;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-OCT-1999
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cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by inducing cancer-specific T cells in vitro for subsequent return to a patient
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/note= "Peptide presented by MHC Class I HLA-B7, HLA-B8
and HLA-B35"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /note= "Peptide presented by MHC Class I HLA-B7, HLA-B8
                                                                                                                                                                                                                                                                                                                                                                                                                           Cancer; tumour; antigen; MHC; major histocompatility complex; T-cell; cytotoxic; helper; stimulation; proliferation; treatment; diagnosis; prevention; melanoma; breast cancer; ovarian cancer; prostate cancer; hepatoma; thyroid cancer; bladder cancer; lung cancer; lymphoma.
                                                                                                                                                    Gaps
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/note= "Peptide presented by MHC Class I HLA-B52"
113. .122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                presented by MHC Class I HLA-B44"
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e= "Peptide presented by MHC Class I HLA-Al"
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                                                                                                                     Score 107; DB 2; Length 180;
Pred. No. 7.3e-05;
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100.0%; Pred. No. ...
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                                                                                                                                                                                                                                                                                          AAY52430 standard; protein; 180 AA.
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.a= "Peptide p
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'note= "Peptide
                                                                                                                                                                                                                                                                                                                                                                                                 Human tumour antigen NY-ESO-1.
                                                                                                                                                                                                       RGPRGAGAARASGPGGGAPR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and HLA-B35
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                                                                                                                                     Local Similarity 100.
Les 20; Conservative
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                                                                                                                                                                                                                                                                                                                                                      (revised)
                                                                                          Sequence 180 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
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15-FEB-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NY-ESO-1; CAMEL, CTL-recognised Antigen on MELanoma; human; cancer; CTL; cytotoxic T lymphocyte; tumour-associated antigen; LAGE-1; anticancer; melanoma; immunotherapy; immune response.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tumor-associated antigen useful for cancer immunotherapy is encoded by the open reading frame of LAGE-1 (a tumor-specific antigen) cDNA.
                                                                                          Revised record issued on 21-OCT-2004 : Correction to feature table key
                                                                                                                                                                                                                                                                                             Gaps
ovarian cancer, thyroid cancer, bladder cancer, or lymphoma) and to stimulate the proliferation of T cells
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                                                                                                                                                                                                                             Length 180;
                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                       100.0%; Score 107; DB 3; ilarity 100.0%; Pred. No. 7.3e-05; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human tumour antigen, NY-ESO-1 protein.
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Best Local Similarity
Matches 20; Conservat
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                                                                                                                                                             Sequence 180 AA;
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Gaps

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Length 180; Indels

100.0%; Score 107; DB 3; 100.0%; Pred. No. 7.3e-05; iive 0; Mismatches 0;

Query Match
Best Local Similarity 100.0
Matches 20; Conservative

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This sequence represents a human oesophageal cancer-associated antigen, NY-ESO-1. The CDNA encoding this sequence was isolated from a CDNA library prepared from a specimen of well-to-moderately differentiated squamous cell cancer of the oesophagus. Expression analysis demonstrated that NY-ESO-1 was expressed in oesophageal carcinoma, certain melanoma coll lines and in normal ovary and testis tissue, but not in normal colon, kidney, liver or brain tissue. Analysis of the amino acid sequence of the protein indicates that the protein has a transmembrane domain, several N-myristcylation sites and O-phosphorylation sites and that it contains antigenic sequences in the N-terminal half of the protein. The antigen is useful as an immunogen when combined with an adjuvant, in both precursor and post-translationally modified forms, and may be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New isolated esophageal cancer-associated antigen useful as markers for producing antibodies and as targets for identifying abnormal conditions, e.g. infections and cancer.
                                                                                                                                                                                                                                     Oesophageal cancer associated antigen; NY-ESO-1; human; immunogen; oesophageal carcinoma; melanoma; ovary; testis; transmembrane domain; antibody; diagnostic marker; drug delivery target.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        'note= "Potential O-phosphorylation site"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            'note= "Potential O-phosphorylation site"
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                                                                                                                                                                                                                                                                                                                                                                                                                   'note= "Potential N-myristoylation site"
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/note= "Potential transmembrane domain"
                                                                                                                                                                                                      Human oesophageal cancer-associated antigen NY-ESO-1.
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                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                AAB03154 standard; protein; 180 AA.
          62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (CORR ) CORNELL RES FOUND INC. (LUDW-) LUDWIG INST CANCER RES.
43 RGPRGAGAARASGPGGGAPR
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is human NY-ESO-1 protein. It is provided in a specification relating to a method for determining the status of a cancerous condition in a patient with a tumour that expresses NY-ESO-1. The method comprises assaying a sample taken from the patient for antibodies that specifically bind to the NY-ESO-1 and comparing the value obtained to a prior value obtained from assay of a prior sample taken from the patient. Any difference between the values is indicative of a change in status of the cancerous condition. The method is useful for determining whether a cancerous condition is progressing or remaining stable, in particular in patients receiving treatment for a melanoma, adenocarcinoma, non-small cell lung carcinoma or bladder
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Method useful for determining the status (e.g. progression, regression or stability of the disease) of a cancerous condition, involves determining the levels of NY-ESO-1 specific antibodies in a sample taken from a patient.
generate anti-NY-ESO-1 antibodies. It can also be used as a diagnostic marker for oseophageal cancer, and can be utilised as a marker for the targetted delivery of therapeutic agents to oseophageal cancer cells. I can also be used to generate diagnostic or therapeutic agents
                                                                                                                                                                                                                                                                                                                      T cell;
                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                     cytotoxic carcinoma;
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                                                                                   Length 180;
                                                                                                                                                                                                                                                                                                                    Human, NY-ESO-1; HLA; human leukocyte antigen; CTL; cytotos
HLA-A2; HLA-DR53; melanoma; adenocarcinoma; bladder carcinc
non-small cell lung carcinoma; tumour status determination.
                                                                                                           Indels
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                                                                                  100.0%; Score 107; DB 3;
100.0%; Pred. No. 7.3e-05;
iive 0; Mismatches 0;
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                                                                                                                                   1 RGPRGAGAARASGPGGGAPR 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-00359503.
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                                                                                                                                                                                                                                                                     (first entry)
                                                                                                           Conservative
                                                                                                                                                                                                                                                                                              Human NY-ESO-1 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Stockert E,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2001-182822/18.
N-PSDB; AAF58634.
                                                                               Query Match
Best Local Similarity
Matches 20; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 180 AA;
                                                            180 AA;
                                                                                                                                                                                                                                                                                                                                                                                            WO200107917-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (LUDW-) LUDWIG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-2001.
                                                                                                                                                                                                                                                                      27-APR-2001
                                                                                                                                                                                                                                              AAB69946;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sarcinoma
                                                              Sequence
                                                                                                                                                          43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jager E,
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(CORR )
                                                                                                                                                                                               RESULT 9
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Length 180;

Score 107; DB 4; Pred. No. 7.3e-05;

100.0%;

Query Match Best Local Similarity

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The present sequence represents cancer testis tumour antigen NY-ESO-1 (also called LAGE-2). NY-ESO-1 is a molecule that is processed to at least one human leukocyte antigen (HLA) binding peptide, which binds to class I and Class II major histocompatibility complex (MHC). NY-ESO-1 is expressed in tumour mRNA and in testis, but not normal colon, kidney, liver or brain tissue. The presence or level of expression of NY-ESO-1 may be assayed for the diagnosis of cancer, especially testis tumours
                                                                                                                                                                                                                                                                                                                                             Cancer testis tumour antigen; NY-ESO-1; LAGE-2; human leukocyte antigen; HLA; HLA binding peptide; major histocompatibility complex; MHC; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Genomic sequences of tumor associated antigen EY-ESO-1 (LAGE-2) useful for diagnosing testicular tumors.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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                                                                                                                                                                                                                                                                                                    Amino acid sequence of cancer testis tumour antigen NY-ESO-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 180;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 107; DB 4;
Pred. No. 7.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                                              AAG67164 standard; protein; 180 AA
                                         62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
1 RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 5; Fig 3; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAU01535 standard; protein; 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
                                         43 RGPRGAGAARASGPGGGAPR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-JAN-2001; 2001WO-US002126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     22-FEB-2000; 2000US-00510635
                                                                                                                                                                                                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Boon-Falleur T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                cancer; testis tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2001-550091/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAH75118.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 180 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200162917-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                        13-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-AUG-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JUL-2001
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Human, major histocompatibility complex; MHC; vaccine; metastasis, class II restricted T cell epitope; MHC-II epitope; cancer antigen; NY ESO-I protein; CD4+ T lymphocyte; human leucocyte antigen; HLA; tumour-specific humoral-mediated immunity; cancer; cytostatic;

Location/Qualifiers 45. .47 /note= "Encoded by CCCGGGGC"

Misc-difference 45

immunotherapy

Homo sapiens

WO200155393-A2

02-AUG-2001

AAE07714 standard; protein; 180 AA.

AAE07714

(first entry)

06-NOV-2001

AAE07714;

Human NY ESO-1 protein.

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The sequence represents a human NY-ESO-1 tumour rejection antigen

precursor. NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to

major histocompatibility complex (MHC) Class II molecules such as human

leukocyte antigen-determining region (HLA-DR) molecules and stimulate

proliferation of helper T cells. The peptides can be administered to an

HLA-DR positive subject in order to stimulate the helper T cells. An MHC

CLASS II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell

CO present in free form is useful for this stimulation. The nucleic acid

is useful for screening for a cancerous condition, which involves

CO contacting a subject sample to a cell line transfected with the

immunoreactive cell (helper T cell), where interaction is indicative of

cancer. In addition, a sample from a patient (for example, a body fluid

or tissue) can be monitored for the amount of the complex present in the

CL onset of a cancerous condition. The method involves contacting the sample

with a radioactive labelled or enzyme labelled monoclonal antibody which

specifically binds with the complex
                 human leukocyte antigen-determining region; disease progression;
disease regression; disease onset; body tissue; body fluid; enzyme label;
radioactive label; monoclonal antibody.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Polypeptides binding to major histocompatibility complex class II human leukocyte antigen-determining region molecule having amino acid sequence found in tumor rejection antigen precursor used for stimulating proliferation of helper T cells.
 helper T cell; HLA-DR; cancer;
                                                                                                                                                                                                                                    note= "Phosphorylated"
                                                                                                                                                                                                                                                                      'note= "Phosphorylated"
                                                                                                                                                                                                                                                                                                        note= "Phosphorylated"
                                                                                                                                                                                                                                                                                                                                            /note= "Phosphorylated"
                                                                                                                                                                                                note= "Myristoylated"
                                                                                                                                                              'note= "Myristoylated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tureci O, Sahin U, Pfreundschuh M;
                                                                                                                            Location/Qualifiers
major histocompatibility complex;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (LUDW-) LUDWIG INST CANCER RES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Fig 3; 62pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-SEP-2000; 2000WO-US026411.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99US-00408036
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2001-266156/27.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AAS02254.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 180 AA;
                                                                                                                                                                                                                                                                                                                                                                                  WO200123560-A2
                                                                                                                                           Modified-site
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                                                                                                                                                                                                                                                                                                                           Modified-site
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                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                      05-APR-2001.
                                                                                          Homo
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The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitopes) darived from the cancer antigen, NY 850-1. The MHC-II epitopes from NY 850-1 are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP creatisticted. The products of the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of calls expressing the NY-BSO-1 gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mediated immunity against cancer. The present sequence is human NY ESO-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 107; DB 4;
100.0%; Pred. No. 7.3e-05;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 1; Fig 1; 134pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Fr.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 180 AA;
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New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as protection from metastasis.

(USSH ) US DEPT HEALTH & HUMAN SERVICES.

2000US-0179004P.

28-JAN-2000; 29-SEP-2000;

26-JAN-2001; 2001WO-US002765

ö Zeng

Rosenberg SA,

Wang R,

WPI; 2001-496851/54. N-PSDB; AAD14179, AAD14180.

RESULT 13

43

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Gaps

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Indels

0

Mismatches

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20; Conservative

Local Similarity

Query Match Best Loca Matches 1 RGPRGAGAARASGPGGGAPR 20 

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100.0%; Score 107; DB 4; Length 180; 100.0%; Pred. No. 7.3e-05;

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AAU11543 standard; protein; 180

(first entry)

12-MAR-2002

AAU11543;

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The invention relates to a new synthetic polypeptide (I) comprising several different segments of at least one parent polypeptide linked together in a different relatives to their linked in the parent polypeptide to impede, abrogate or otherwise alter at least one function associated with the parent polypeptide and for inducing an immune response against a pathogen or cancer. Also included are a synthetic polypeptides. The synthetic polypeptides and a computer system for designing the synthetic polypeptides. The synthetic polypeptides and polymucleotides or are referred to as a Savine. The synthetic polypeptide is useful for modulating immune responses preferably directed against a pathogen or a cancer, (e.g., cancers of the lung, breat, ovary, cervix, colon, head and neck, pancreas, prostate, stomach, bladder, kidney, bone liver, coscophagus, brain, testicle, uterus), as potentiating agents.

Compositions comprising the polypeptide may be used in the treatment or prophylaxis against viral (such as infections caused by HIV (human comprising the polypeptide syncytial virus), bacterial color, infections caused by Neisseria, Meningococcal, Haemophilus, color, infections caused by Plasmodium, Schistosoma, Iteishmania, color, infections caused by Plasmodium, Schistosoma, Leishmania, constituted in a parent protein used to design a savine of the invarious.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New synthetic polypeptides having several different segments of at least one parent polypeptide linked together differently compared to the linkage in the parent polypeptide, for inducing immune response against a
                                                                                                                                                                          Savine, vaccine; cancer; viral infection; HIV; hepatitis C virus; viral infection; human immunodeficieny virus; melanoma; bacterial infection; Salmonella; Legionella; parasitic infection;
                 AAU84818 standard; protein; 180 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 3; Fig 27; 364pp; English.
                                                                                                                                          Human NYNSOla consensus sequence.
                                                                                                                                                                                                                                            Irypanosoma; Toxoplasma; Giardia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     26-MAY-2000; 2000AU-00007761.
                                                                                                                                                                                                                                                                                                                                                                                                            25-MAY-2001; 2001WO-AU000622.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (AUSU ) UNIV AUSTRALIAN NAT
                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ramshaw IA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MPI; 2002-147575/19.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                pathogen or cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 180 AA;
                                                                                                                                                                                                                                                                                                                             40200190197-A1.
                                                                                                                                                                                                                                                                                       Ното варіеля
                                                                                                  08-MAY-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Thomson SA,
                                                                                                                                                                                                                                                                                                                                                                      29-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       invention
                                                         AAU84818;
AAU84818
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                                 Gaps
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Length 180;
                             Indels
100.0%; Score 107; DB 5;
ilarity 100.0%; Pred. No. 7.3e-05;
Conservative 0; Mismatches 0;
                                                           1 RGPRGAGAARASGPGGGAPR 20
            Best Local Similarity
Matches 20; Conserv
    Query Match
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62

43 RGPRGAGAARASGPGGGAPR

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The invention relates to a vaccine comprising a first housekeeping epitope derived from a first antigen associated with a first target cell. Also included are an isolated T cell expressing a T cell receptor an isolated T cell expressing a T cell receptor period of peptide from a first target cell, selecting an epitope (or antigen associated with a first target cell, selecting an epitope (or antigen associated with a first target cell, selecting an epitope (or peptide sequence) from a population of peptide fragments have a known or predicted affinity for a MRC receptor peptide binding cleft of the host, where the epitope selected corresponds to a product of proteolytic comprises a first sequence encoding at least a first polypeptide, where the first polypeptide comprises a first housekeeping epitope derived from comprises a first bounding at least a first polypeptide, where the first polypeptide comprises a first housekeeping epitope derived from a first antigen associated with a first target cell; The epitopes, or medicament for use in adoptive immunotherapy and for prevention and treatment of neoplastic and viral diseases (e.g. human immunodeficiency virus, Huy, infection, hepatitis virus and papilloma virus), cancers (e.g. tumours, leukeamia, lymphoma, breast cancer, prostate cancer and lung cancer), infection of cells by intracellular parasites (e.g. the powers leukemia, Trypanosoma and Toxoplasma) and many other examples given in the specification. The invention permits the vaccine design. The cover be useful because they cannot be presented by target cells. The peptides that, despite predicted high binding affinity for MRC, will never be useful because they cannot be presented by target cells. The immunology. The invention allows for the simple and effective selection of immunology the antigen presenting contents of meaningful epitopes for creation of MRC class I or Class I or Class II vaccines contenting provides an HIA-A2.1 (human leukoyte entigen) presenting
                                                                                                                                                                                                  major histocompatibility complex; MHC; HLA-A2.2; vaccine; cancer; HIV; human immunodeficiency virus infection; cytostatic; virucide; housekeeping epitope; adoptive immunotherapy; neoplastic disease; virus indisease; hepatitis virus; papilloma virus; tumour; leukaemia; lymphoma; breast cancer; prostate cancer; lung cancer; parasitic infection; Chlamydia; Trypanosoma; Toxoplasma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Novel vaccine useful for treating neoplastic and viral diseases, comprises a first housekeeping epitope derived from a first antigen associated with a first target cell.
                                                                                                                                                                               tumour associated antigen; NY-ESO; human leukocyte antigen;
                                                                                                                                    Human tumour associated antigen NY-ESO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 23; Fig 17; 131pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTLI-) CTL IMMUNOTHERAPIES CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lei X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-APR-2000; 2000US-00561572.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-APR-2000; 2000US-00560465.
28-APR-2000; 2000US-00561074.
28-APR-2000; 2000US-00561571.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27-APR-2001; 2001WO-US013806.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Diamond DC,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-066492/09.
                                                                                                                                                                                                                                                                                                                                                                                                                    WO200182963-A2.
                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Simard JJL,
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                                                                                                                               ö
target cell protein from which epitopes of the invention may be derived, NY-ESO (a tumour associated antigen)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New genes that are up-regulated or down-regulated in cancers, useful as markers for diagnosing e.g. cancer, ischemia or heart diseases, or as therapeutic targets for screening drugs for treating these diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                           Human, cancer, diagnosis, screening, modulator, leukaemia, ischaemia, heart disease, atherosclerosis, endometriosis.
                                                                                                                               Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Wilson KE;
                                                                                         Length 180;
                                                                                                                            Indels
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                                                                                       ch 100.0%; Score 107; DB 5; 1 Similarity 100.0%; Pred. No. 7.3e-05; 20; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                         Human cancer related protein SEQ ID NO:329.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 12; Page 757-758; 767pp; English.
                                                                                                                                                                                                                                                                                            ABR58672 standard; protein; 180 AA.
                                                                                                                                                                1 RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                     17-SEP-2001; 2001US-0323469P.
20-SEP-2001; 2001US-0323887P.
13-NOY-2001; 2001US-0350666P.
08-FEB-2002; 2002US-0355145P.
12-APR-2002; 2002US-035527P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (EOSB-) EOS BIOTECHNOLOGY INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gish KC,
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N-PSDB; ACC72823.
                                                                                                          Best Local Similarity
Matches 20; Conserv
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                                                       Sequence 180 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
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atherosclerosis and endometriosis. The nucleic acid is also useful in drug screening, particularly for identifying agents for treating these pathologies
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                                                                                                              Length 180;
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                                                                                                              100.0%; Score 107; DB 6;
100.0%; Pred. No. 7.3e-05;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                        September 11, 2005, 01:38:04
                                                                                                                                                                                            1 RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                                                  43 RGPRGAGAARASGPGGGAPR 62
                                                                                                                                                      20; Conservative
                                                                                                                                    Best Local Similarity
                                                                                                                                                                                                                                                                                          Search completed: Septer Job time: 28.6667 secs
                                                                          Sequence 180 AA;
                                                                                                                  Query Match
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September 11, 2005, 01:28:54; Search time 5.61905 Seconds (without alignments) 342.466 Million cell updates/sec
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Compugen Ltd.
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                                                                                                                                                                                                                                                                                         283416 segs, 96216763 residues
GenCore version
Copyright (c) 1993 - 2005
                                                                 - protein search, using sw model
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107
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

summaries

Minimum Match 0% Maximum Match 100% Listing first 45 sc

Post-processing:

PIR 79:*
1: pir1:*
2: pir2:*
1: pir3:*

Database :

hypothetical prote cytochrone—c oxida hypothetical prote POU-domain protein alternative splici alternative splici alternative splici alternative splici CREB-binding prote probable periplasm hypothetical glyci alpha-2A-adrenergi late protein, 100K ATP dependent DNA cytochrome-c oxida brain-specific kin hypothetical prote alternative splici myosin-IA - Acanth receptor-like tyro receptor-like tyro hypothetical prote hypothetical prote hypothetical prote BAK5 protein - bov probable nuclear a spidroin 2, dragli polyketide hydroxy probable transcrip collagen alpha 1 c receptor tyrosine Description SUMMARIES S51603 S51604 S49015 OTHUSB 148967 T21096 T21095 S78452 C40040 A40040 T46417 JC2254 T36273 F83124 T29173 S51212 F71275 A70934 A34169 S33945 T35694 B40040 S26404 Query Match Length Score 52.5 52.5 52.5 53.5 Result No.

receptor-like tyrosine kinase Ehk-1 - rat
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Species: Sistem control of the control of the

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Gaps

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Score 60; DB 2; Length 893; Pred. No. 18; 0; Mismatches 6; Indels

Query Match 56.1%; Best Local Similarity 61.9%; Matches 13; Conservative

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	2 JC5273 2 A47234	1 EDBE22 1 EDBE23	1171 2 T42372 probable guanylate	1 EDBEE1	1 EDBEF6	1958 2 B40505 hypothetical prote	2 T47231	2 I59234	632 2 842731 collagen alpha 1 c 688 2 T48796 probable ATP-depen	ALIGNWENTS		polyketide hydroxylase - Streptomyces coelicolor	c.pectes: Streptomyces Committed. C.Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text change 09-Jul-2004		Kibeeyer, A.U.; maills, D.; vames, A.U.; raikhill, U.; Bairell, B.G.; Kajandream, M.A. submitted to the EMBL Data Library, June 1999	584	A;Status: preliminary; translated from GB/EMBL/DDBJ		A;Cross-references: UNIPROT:P42534; EMBL:AL079356; PIDN:CAB45603.1; GSPDB:GN00070; SCOB: A:Experimental source: strain A3(2)		C;Superfamily: tetracycline 6-hydroxylase	62.6%; Score 67; DB 2; Length 627; larity 75.0%; Pred. No. 2.3;
49.1	48.6	48.6 48.6	48.6	48.6	48.6	48.1	47.7	47.7	47.7			oxylase	1999 #86	5608	EMBL I	er: 22] 608	inary;	7 <see< td=""><td>tes: UNI</td><td>C6G9.12</td><td>etracyo</td><td>nilarity</td></see<>	tes: UNI	C6G9.12	etracyo	nilarity
52.5	22 2	2 2	52	25	25	51.5	217	51	51			de hydro	05-Nov-1	C, Accession: T35608	d to the	A;kererence number: ZZ1584 A;Accession: T35608	prelin	A;Residues: 1-627 <see></see>	referenc mental a	C, Genetica: A, Gene: SCOEDB: SC6G9.12c	amily: t	Query Match Best Local Similarity
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cytochrome-c oxidase (EC 1.9.3.1) chain Vb precursor - human C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 31-Mar-1992 #sequence_revision 07-Jun-1996 #text_change 09-Jul-2004
C;Accession: J70324; A39063; E;A4198; A28817
R;Zeviani, M.; Sakoda, S.; Sherbany, A.A.; Nakase, H.; Rizzuto, R.; Samitt, C.E.; DiMau A;Title: Sequence of CDNAs encoding subunit Vb of human and bovine cytochrome c oxidase A;Reference number: J70324; MUID:88284368; PMID:2840351
                                                                                                                                                                                                                                                                                                             A; Residues: 1-129 <2EV.)
A; Cross-references: UNIPROT: P10606; UNIPROT: 099610; EMBL: M19961; NID: 9180940; PIDN: AAAS.
B; Lomax, M.I.; Haieh, C.L.; Darras, B.T.; Francke, U.
Genomics 10, 1-9, 1991
A; Title: Structure of the human cytochrome c oxidase subunit Vb gene and chromosomal markeference number: A39063; MUID: 91257815; PMID: 1646156
A; Accession: A39063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Note: the authors translated the codon GGC for residue 21 as His R;Bachman, N.J.; Yang, T.L.; Dasen, J.S.; Brnst, R.E.; Lomax, M.I.
Arch. Biochem. Biophys. 333, 152-162, 1996
A;Title: Phylogenetic footprinting of the human cytochrome c oxidase subunit Vb promote A;Reference number: S74198; MUID:96400390; PMID:8806766
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ajgner GDB:COX5B
Ajgner GDB:COX5B
Ajgner Screener GDB:127530; OMIM:123866
Ajgross-references: GDB:127530; OMIM:123866
Ajgnome: nuclear
Ajgnome: nuclear
Cjcomplex: part of a 13 chain complex spanning the inner mitochondrial membrane and con (see PIR:OTHUSA), VID (see PIR:OTHUGA), VID (see PIR:OTHUGA), GDB:COHUGC)
m dimers within the mitochondrial inner-membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A)Description: the cytochrome-c oxidase complex catalyzes the oxidation of four molecul ns from the mitochondrial matrix producing two molecules of water and lowering the conc A;Note: the role of chain VD is not clear

C;Superfamily: mammalian cytochrome-c oxidase chain VD

C;Keywords: electron transfer; membrane-associated complex; mitochondrial inner membran F;32-129/Peroduct: cytochrome-c oxidase chain VD #status predicted <TNP>
F;32-129/Peroduct: cytochrome-c oxidase chain VD #status predicted <MAT>
F;91,93,113,116/Binding site: zinc (Cys) #status predicted
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C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 02-Unl-1996 #sequence_revision 02-Jul-1996 #text_change 09-Jul-2004
C;Accession: 18957
R;Zhou, R.R.; Copeland, T.D.; Kromer, L.F.; Schulz, N.T.
J. Neurosci. Res. 37, 129-143, 1994
A;Atitle: Isolation and characterization of Bsk, a growth factor receptor-like tyrosine
A;Reference number: I48967; MUID:94194581; PMID:8145300
A;Accession: I48967
A;Atsatues: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-877 <RES>
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Pred. No. 4.9;
1; Mismatches 7; Indels
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A,Molecule type: DNA
A,Residues: 1-108, 'E', 110-129 <LOM>
A,Cross-references: EMBL:M59250
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1 Similarity 57.9%;
11; Conservative
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A;Molecule type: DNA
A;Residues: 1-35,'TR' <BAC>
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Best Local Similarity
Matches 11; Conserv
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Oncogene 8, 3277-3288, 1993
A;Title: Ehk-1 and Ehk-2: two novel members of the Eph receptor-like tyrosine kinase fam
A;Reference number: 849015; MUID:94067777; PMID:7504232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        receptor-like tyrosine kinase fam
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A,Note: the authors translated the codon GAC for residue 170 as Glu
C;Superfamily: protein-tyrosine kinase, receptor type eph; fibronectin type III repeat
C;Keywords: ATP; transmembrane protein
F;675-941/Domain: protein kinase homology <KIN>
F;683-691/Region: protein kinase ATP-binding motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Residues: 1-91 (MAI.)
A; Cross-references: EMBL:S68029
A; Cross-references: EMBL:S68029
A; Note: the authors translated the codon GAC for residue 170 as Glu
C; Superfamily: protein-tyrosine kinase, receptor type eph; fibronectin type III repeat C; Keywords: ATP; transmembrane protein
F; 651-917/Domain: protein kinase homology (KIN)
F; 659-667/Region: protein kinase ATP-binding motif
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Cispecies: Ratrus: S49015; S31602
R; Maisonpierre, P.C.; Barrezueta, N.X.; Yancopoulos, G.D.
Oncogens 8, 3277-3288, 1993
A; Fille: Ehk-1 and Ehk-2: two novel members of the Eph receptor-like tyrosir A; Reference number: 849015; MUID:94067777; PMID:7504232
                                                                                                                                                                                                                                             receptor-like tyrosine kinase Ehk-1 - rat
C:Species: Rattus norvegicus (Norway rat)
C:Date: 07-May-1995 #sequence_revision 21-Jul-1995 #text_change 29-May-1998
C;Accession: S51604
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A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-1005 <MAI>
A;Residues: 1-1005 <MAI>
A;Cross-references: UNIPROT:P54757; EMBL:S68024
A;Note: the authors translated the codon GAC for residue 170 as Glu
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61.9%; Pred. No. 19;
:ive 0; Mismatches
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                     GPRGAGAARASGPGGG--APR 20
                                                                                     GPRCAGRRRTQGRGGGGDTPR 25
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A;Molecule type: mRNA
A;Regidues: 1-305,'G',359-1005 <MA2>
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A,Status: preliminary
A,Molecule type: mRNA
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530 PRPAGAPRVGGPGVQMGGAP 549
        3 PRGAGAARASGPG---GGAP 19
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,Molecule type: protein
A,Residues: 32-41 <SCH>
A,Experimental source: liver
C,Genetics:
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A; Residues: 1-129 <HO2>
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A;Reference number: Z19373
A;Accession: T21099
A;Accession: T21095
A;Accession: T21095
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-692 < WILD>
A;Accessive references: UNIPROT:Q19579; EMBL:Z50110; PIDN:CAA90444.1; GSPDB:GN00028; CESP:F1
A;Experimental source: clone F18H3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: UNIPROT:Q19581; EMBL:Z50110; PIDN:CAA90446.1; GSPDB:GN0028; CESP:F1
A;Experimental source: clone F18H3
C;Genetics:
A;Cross-references: UNIPROT:Q60629; EMBL:U07357; NID:g466369; PIDN:AAA17038.1; PID:g4663
                                                                           C;Superfamily: protein-tyrosine kinase, receptor type eph; fibronectin type III repeat C;Keywords: ATP; transmembrane protein F;512-718/Domain: protein kinase homology <KIN> F;520-528/Region: protein kinase ATP-binding motif F;801-868/Domain: SAM homology <SAM>
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A;Introns: 111/1; 215/2; 469/3; 552/3
C;Superfamily: polyadenylate-binding protein; ribonucleoprotein repeat homology
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A;Introns: 111/1; 215/2; 469/3; 552/3
C;Superfamily: polyadenylate-binding protein; ribonucleoprotein repeat homology
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein F18H3.3b - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct_1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypothetical protein F18H3.3a - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-11999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T21095
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                                                                                                                                                                                                                                                                                         6; Indels
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A;Molecule type: DNA
A;Residues: 1-566 <WIL>
                                                                                                                                                                                                                                 55.1%; Score 59; DB 2;
61.9%; Pred. No. 22;
Ative 0; Mismatches
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Best Local Similarity 65.0%; Pred. No. 18;
Matches 13; Conservative 0; Mismatches
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A;Reference number: Z19373
A;Accession: T21096
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                                                                                                                                                                                                                   Query Match
Best Local Similarity 61.99
Matches 13; Conservative
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cytochrome-c oxidase (EC 1.9.3.1) chain Vb precursor - rat
N;Alternate names: cytochrome-c oxidase (EC 1.9.3.1) chain VIa*
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Oct-1994 #sequence revision 26-May-1995 #text_change 09-Jul-2004
C;Accession: JC2254; JC2255; $05318; $65375
C;Accession: JC2254; JC2255; $05018; $65375
J;Hoshinaga, H:, Amuro, N: Goto, Y:, Okazaki, T.
J; Biochem. 115, 194-201, 1994
A;Title: Molecular cloning and characterization of the rat cytochrome c oxidase subunit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Molecule type: mRNA
Khesidues: 1-129 <HOS-
A;Cross-references: UNIPROT:P12075; DDBJ:D10952; NID:g493694; PIDN:BAA01744.1; PID:g493
A;Experimental source: liver
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R;Goto, Y.; Amuro, N.; Okazaki, T.
Nucleic Adids Res. 17, 6388, 1989
A;Title: Nucleotide sequence of cDNA for rat liver and brain cytochrome c oxidase subun A;Reference number: S05318; MUID:89366668; PMID:2549512
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A; Residues: 31-129 < GOTA
A; Residues: 31-129 < GOTA
A; Cross-references: BMBL:X14208
R; Schaegger, H.; Moack, H.; Halangk, W.; Brandt, U.; von Jagow, G.
R; Schaegger, B.; Noack, H.; Halangk, W.; Brandt, U.; von Jagow, G.
A; Schaegger, J. 1995
A; Title: Cytochrome-c oxidase in developing rat heart. Enzymic properties and amino-ter.
A; Reference number: S65372; MUID:95324529; PMID:7601105
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A;Introns: 35/1; 59/3; 93/1
A;Note: intronless gene COXVD-2 apparently a nonfunctional processed pseudogene
A;Note: intronless gene COXVD-2 apparently
C;Superfamily: mammaalian cytochrome-c oxidase chain Vb
C;Keywords: membrane-associated complex; mitochondrial inner membrane; mitochondrion; o
F;1-31/Domain: transit peptide (mitochondrion) #status predicted <TNP>
F;32-129/Product: cytochrome-c oxidase chain Vb #status predicted <MAT>
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R;Murphy, L.; Harris, D.; James, K.D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A. submitted to the EMBL Data Library, June 1999
A;Reference number: Z21576
A;Accession: T36273
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C;Species: Streptomyces coelicolor
C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
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A;Molecule type: DNA
A;Residues: 1-355 <MUR>
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90 RSGRGTGRGGGGGGGGAPR 109
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1 Similarity 55.0%;
11; Conservative
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Best Local Similarity 55.0°
Matches 11; Conservative
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Best Local Similarity
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A;Molecule type: mRNA
A;Residues: 1-248 <GEA>
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A; Residues: 1-331 <ALT>
A; Residues: 1-331 <ALT>
A; Coss-references: EMBL:X64624; NID:335914; PIDN:CAA45907.1; PID:335915
A; Cross-references: EMBL:X64624; NID:335914; PIDN:CAA45907.1; PID:335915
B; Collum, RG: Fisher, P.E.; Datta, M.; Mellis, S.; Thiele, C.; Huebner, K.; Croce, C.N Nucleic Acids Res. 20, 4919-4925, 1992
A; Title: A novel POU homeodomain gene specifically expressed in cells of the developing A; Reference number: 138151; MUID:93027214; PMID:1357630
A,Cross-references: UNIPROT:Q9WX09; EMBL:AL079345; PIDN:CAB45359.1; GSPDB:GN00070; SCOED A,Experimental source: strain A3(2)
Genetics: Genetics: SCOEDB:SCE68.23c
A;Gene: SCOEDB:SCE68.23c
C;Superfamily: Streptomyces coelicolor hypothetical protein SCE68.23c
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POU-domain protein rdc-1 - human
C;Species: Homo sapiens (man)
C;Date: 19-Mar-1998 #sequence revision 19-Mar-1998 #text_change 16-Aug-2004
C;Accession: S78452; S26063; \(\overline{1}\)38151
R;Alt, F.W.
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C;Date: 24-Jan-1992 #sequence_revision 24-Jan-1992 #text_change 16-Aug-2004
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C; Superfamily: homeobox homology; POU domain homology
C; Keywords: DNA binding; homeobox; nucleus; transcription regulation
F; 181-250/Domain: POU domain homology <POU>
F; 268-324/Domain: homeobox homology <HOX>
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A,Status: preliminary
A,Molecule type: mRNA
A,Residues: 1-201 «GEA>
A,Cross-references: UNIPROF:Q07955; GB:M72709
C,Superfamily: ribonucleoprotein repeat homology
F;17-81/Domain: ribonucleoprotein repeat homology «RRMI>
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Pred. No. 18;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       submitted to the EMBL Data Library, February 1992
A;Reference number: S78452
A;Accession: S78452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Accession: S26063
A;Molecule type: mRNA
A;Residues: 174-177,'S',179-233,'K',235-327 <COL>
A;Cross-references: EMBL:X64624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 56; DB 2
Pred. No. 22;
0; Mismatches
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61.1%;
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ilarity 57.9%;
Conservative
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Cell 66, 373-382, 1991
A,Title: Primary structure of t
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Rige, H.; Zuo, P.; Manley, J.L.
Cell 66, 373-382, 1991
Ajtile: Primary structure of the human splicing factor ASF reveals similarities with D A;Reference number: A40040; MUID:91309149; PMID:1855257
A;Accession: A40040
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A;Title: Functional expression of cloned human splicing factor SF2: homology to RNA-bin A;Reference number: A40041; MUID:91309150; PMID:1830244
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A;Residues: 1-248 <KRA>
A;Cross-references: GB:M69040; NID:g338046; PIDN:AAA03476.1; PID:g338047
A;Cross-references: GB:M69040; NID:g338046; PIDN:AAA03476.1; PID:g338047
C;Superfamaily: unassigned ribonucleoprotein repeat containing proteins; ribonucleoprotein repeat homology <RRM1>
F;17-81/Domain: ribonucleoprotein repeat homology <RRM2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A,Cross-references: UNIPROT:Q8BJV3; EMBL:X66091
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, May 1992
C;Superfamily: ribonucleoprotein repeat homology <RRM1>
F;17-81/Domain: ribonucleoprotein repeat homology <RRM2>
F;122-182/Domain: ribonucleoprotein repeat homology <RRM2>
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                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: mRNA A;Residues: 1-201 <TAC>
alternative splicing factor ASF - mouse
C;Species: Mus musculus (house mouse)
C;Date: 25-Feb-1994 #sequence_revision 26-May-1995 #text_change 16-Aug-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C.Species: Homo sapiens (man)
C.Date: 24-Jan-1992 #sequence_revision 24-Jan-1992 #text_change 09-Jul-2004
C.Accession: A40040; B40041
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                                                                                                            C;Accession: S26404
R;Tacke, R.; Boned, A.; Goridis, C.
Nucleic Acids Res. 20, 5482, 1992
A;Title: ASF alternative transcripts are highly conserved between mouse A;Reference number: S26404; MUID:93065226; PMID:1437571
A;Accession: S26404
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Pred. No. 23;
0; Mismatches 9; Indels
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Pred. No. 19;
0; Mismatches 9; Indels
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T46417

hypothetical protein DKFZp434K1323.1 - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 04-Feb-2000 #sequence_revision 04-Feb-2000 #text_change 09-Jul-2004
C;Accession: T46417
R;Blum, H; Bauersachs, S; Mewes, H.W.; Gassenhuber, J; Wiemann, S.
B;Blum, H; Bauersachs, S; Mewes, H.W.; Gassenhuber, J; Wiemann, S.
A;Reference number: Z23034
A;Reference number: Z23034
A;Recession: T46417
A;Residues: 1-250 <AAA>
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15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Cancer/testis antigen 1B (Autoimmunogenic cancer/testis antigen NY-
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lethe B.G.; AMR-2000) to the EMBL/GenBank/DDBJ databases. Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases. EMBL; AJ275978; CAB76845.1; -. Hypothetical protein.
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                   09VBX3
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01-OCT-2000 (TrEMBLrel. 15, Created)
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01-OCT-2002 (TrEMBLrel. 22, Last annot
Hypothetical protein LAGE-2 (Fragment)
Name=LAGE-2;
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NCBI_TaxID=9606;
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                 GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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                                                                                                                                                                                                                                                                                                                                                                     1612378 seqs, 512079187 residues
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                       TISSUE-Melanoma;
MEDLINE-98289662; PubMed=9626360;
Lethe B., Lucas S., Michaux L., de Smet C., Godelaine D., Serrano A.,
de Plaen E., Boon T.;
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SEQUENCE FROM N.A.
MEDLINE-98430682; PubMed=9759882;
Wang R.-F., Johnston S.L., Zeng G., Topalian S.L.,
Mang R.-F., Johnston S.L., Zeng G., Topalian S.L.,
Schwartzentruber D.J., Rosenberg S.A.;
"A breast and melanoma-shared tumor antigen: T cell responses to
antigenic peptides translated from different open reading frames.";
J. Immunol. 161:8596-3606(1998).
-!-TISSUE SPECIFICITY: Expressed in testis and ovary and in a wide
variety of cancers. Detected in uterine myometrium.
-!- SIMILARITY: Belongs to the CTAG family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. (ISOFORMS LAGE-1A AND LAGE-1B), AND VARIANTS GLN-89 AND ARG-138.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE=Melanoma;
MEDLINE=99225550; PubMed=10399963;
Aarnoudse C.A., Van den Doel P.B., Heemskerk B., Schrier P.I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 107; DB 1; Length 180; 1 Similarity 100.0%; Pred. No. 0.0004; Conservative 0; Mismath.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              O75538; O75637; O9BU80; O9UJ89; O9Y479; 30-MAY-2000 (Rel. 39, Created) 30-MAY-2000 (Rel. 39, Last sequence update) 25-OCT-2004 (Rel. 45, Last annotation update) Cancer/testis antigen 2 (LAGE-1 protein) (ESO-2 protein). Name=CTAG2; Synonyms=ESO2, LAGE1; Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Potential.
B122C5C2C8BE1569 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. (ISOFORMS LAGE-1A AND LAGE-1B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "LAGE-1, a new gene with tumor specificity.";
Int. J. Cancer 76:903-908(1998).
                                                                                                     "LAGE-1, a new gene with tumor specificity."; Int. J. Cancer 76:903-908(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       210 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gly-rich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Melanoma;
MEDLINE=98289662; PubMed=9626360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 RGPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RGPRGAGAARASGPGGGAPR 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AJ003149; CAA05908.1; -. EMBL; AF038567; AAD05202.1; -. Genew; HGNC:2491; CTAG1B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    180 AA; 17992 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; U87459; AAB49693.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Antigen; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              172
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CTG2 HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local & Matches 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CTG2_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
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MEDINES Placents in the control of t
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Poly-rich.
MSVWDDREGAGRARUVGWGLGSASPEGGKARDLRTPKHKV
SBQREGTFGFPPFEGAAGGGCGGYARNVMFSAPHI -> IR
LTAADHRQLGLSISSCLQOLSLLMWITQCFLPVFLAQAPSG
"Interleukin-2-induced, melanoma-specific T cells recognize CAMEL, an unexpected translation product of LAGE-1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Name=LAGE-1A; Synonyms=LAGE-1S; 18 Isoid=075638-2; Sequence=VSP 004301; Isoid=075638-2; Sequence=VSP 004301; TISSUE SPECIFICITY: Testis and very low level in placenta and in some uterus samples. Observed in 25-50% of tumor samples of melanomas, non-small-cell lung carcinomas, bladder, prostate and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 head and neck cancers.

DOMAIN: A transmembrane domain is present in isoform LAGE-1A.
SIMILARITY: Belongs to the CTAG family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    splicing; Antigen; Polymorphism; Transmembrane.
                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM LAGE-1B), AND VARIANT ARG-138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORR (in isoform LAGE-1A)
/FTId=VSP_004301.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
-!- ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Event=Alternative splicing, Named isoforms=2;
Name=LAGE-1B; Synonyms=LAGE-1L;
IsoId=075638-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               R -> Q.
/FTId=VAR_007855.
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EMBL; AJ223093; CAA11116.1; --
EMBL; AJ223040; CAA11043.1; --
EMBL; AJ012834; CAA11044.1; --
EMBL; AJ012834; CAA10196.1; --
EMBL; AJ012835; CAA10196.1; --
EMBL; BC002833; AAH02833.1; --
                                                      unexpected translation product Int. J. Cancer 82:442-448(1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HGNC:2492; CTAG2.
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NP BIND
CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                  Query Match
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                                                                                                                                                                                                              RESULT 5
CT86_HUMAN
                                                                                                             Matches
57777
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                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Blanco G., Pereda A., Brian P., Mendez C., Chater K.F., Salas J.A.;
"A hydroxylase-like gene product contributes to synthesis of a
polyketide spore pigment in Streptomyces halstedii.";
J. Bacteriol. 175:8043-8048(1993).
-!- FUNCTION: Involved in developmentally regulated synthesis of a
compound biosynthetically related to polyketide antibiotics which
is essential for spore color in Streptococcus coelicolor.
-!- COPACTOR: FAD (By similarity).
-!- SIMILARITY: Belongs to the pheA/tfdB FAD monooxygenase family.
                                         Gaps
                                                                                                                                                                                                                                                                                                                                                MEDLINE-21996410; PubMed=12000953; DOI=10.1038/417141a; MEDLINE-21996410; PubMed=12000953; DOI=10.1038/417141a; Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L., Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H., Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M., Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S., Huang C.-H., Kieser T., Larke L., Murphy L.D., Oliver K., O'Neil S., Rabbinowitsch E., Rajandram M.A., Rutherford K.M., Rutter S., Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K., Warren T., Wietzorrek A., Woodward J.R., Barrell B.G., Parkhill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Complete genome sequence of the model actinomycete Streptomyces coelicolor A3(2).";
Nature 417:141-147(2002).
                                         ö
                                                                                                                                                              HYDL STRCO STANDARD; PRT; 627 AA.
P42534, O9S2L7;
01.00V-1995 (Rel. 32, Created)
16-0CT-2001 (Rel. 40, Last sequence update)
25-0CT-2004 (Rel. 45, Last annotation update)
Putative polykyetide hydroxylase (EC 1.14.13.-) (WhiE ORF VIII).
OrderediocusNames-ESCG521; ORFNames=ESCG9.12c;
Streptomyces coelicolor.
Bacteria; Actinobacteria, Actinobacteriaes;
              Length 210;
           Score 99; DB 1; Length 210
Pred. No. 0.0032;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRINTS; PRO0420; RNGANOXGNASC.
Complete proteome; FAD; Flavoprotein; Oxidoreductase.
NP_BIND 22 51 FAD FANOR FAD (PARTIELL)
                                                                                                                                                                                                                                                                                              Streptomycineae; Streptomycetaceae; Streptomyces.
NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR008160; Collagen.
InterPro; IPR00033; Flav_monooxygnse.
InterPro; IPR002938; Moxy FAD binding.
InterPro; IPR003042; Rng_mnoxygenase.
Pfam; PF01494; FAD binding 3; 1.
Pfam; PF01360; Monooxygenase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=94075247; PubMed=8253693;
                                                                   20
                                                                                             43 RGPRGAGAARASGPRGGAPR 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AL939123; CAB45603.1; -.
EMBL; X74213; CAA52289.1; -.
PIR; T35608; T35608.
                                                                   1 RGPRGAGAARASGPGGGAPR
           92.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 1-255 FROM N.A.
                                       Conservative
                         Similarity
                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hopwood D.A.;
           Query Match
Best Local Simil
Matches 19; C
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MEDLINE-21638749; PubMed=11780052; DOI=10.1038/4148658;

MEDLINE-21638749; PubMed=11780052; DOI=10.1038/4148658;

MEDLINE-21638749; PubMed=11780052; DOI=10.1038/4148658;

A Doloukae P., Matthews L.H., Ashurst J.L., Burton J., Gilbert J.G.R.,

Balley J., Barlow K.F., Bates K.N., Beard L.M., Beare D.M.,

Balley J., Barrow K.F., Bates K.N., Beard L.M., Brown A.J.,

Raberson J.C., Clamp M., Clark S.Y., Clark S.Y., Clark D.W.,

Raberson J.C., Clamp M., Clark G., Clark L.M., Clark S.Y., Clee C.M.,

Raberson J.C., Clamp M., Carlier R.E., Connor R.E., Corby N.R.,

Clegg S., Cobley V.E., Collier R.E., Connor R.E., Corby N.R.,

Raberson J.C., Frankland J.A., Franklan P.D., Dunn M.,

Bilington A.G., Frankland J.M., Hoath P.D., Ho S., Holden J.L., Howden P.J.,

Rammond S., Harley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,

Ray M.P., Kimberley J.L., Heath P.D., Ho S., Holden J.L., Howden P.J.,

Ray M.P., Kimberley A.M., King A., Knights A., Laird G.K., Lawlor S.,

Lehvaeelaiho M.H., Leversha M.A., Lloyd C., Lloyd D.M., Lovell J.D.,

Marsh V.L., Martin S.L., McConnachie L.J., McLay K., McMurray A.A.,

A Nillane S.A., Mistry D., Moore M.J.F., Mullikin J.C., Nickerson T.,

Ray M.B., Sycanore N., Taylor R., Thomas D.W., Thorpe A.,

Swann R.M., Sycanore N., Taylor R., Thomas D.W., Thorpe A.,

Swann R.M., Sycanore N., Taylor R., Tee L., Thomas D.W., Thorpe A.,

Swann R.M., Sycanore N., Taylor R., Tee L., Williams L., Williams S.A.,

Miltehad S.L., Whittaker P., Willey D.L., Williams L., Williams L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. The European Bioinformatics Institute. The European Bioinformatics Institute. The European Bioinformatics Institute. The European Statement is not removed. Usage by and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The DNA sequence and comparative analysis of human chromosome 20.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606,
                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                       62.6%; Score 67; DB 1; Length 627;
                                                                                                                                                                                                                                                                                                                                           4; Indels
                                   R -> A (in Ref. 2).
L -> LH (in Ref. 2).
C -> S (in Ref. 2).
746E84A2A9E9511C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature 414:865-871(2001).
-!- SIMILARITY: Contains 2 ANK repeats.
-!- SIMILARITY: Contains 1 ubiquitin-like domain.
    FAD (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Hypothetical protein c20orf86.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               337 AA
                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                           Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AL354776; CAC17565.2; -. HSSP; P42771; 2A5E.
                                                                                                                                                                        64557 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               447 GPRGAGGAPGGGPGGG 462
                                                                                                                                                                                                                                                                                                                                                                                                                           2 GPRGAGAARASGPGGG 17
                                                                                                                                                                                                                                                                                               75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Genew; HGNC:16217; C20orf86.
                                                                                                                                                                                                                                                                                               Local Similarity 75.0 nes 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR002110; ANK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
319
60
145
234
309 3
60
145 1
234 2
627 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CT86 HUMAN
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Gaps

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SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

SARAÎT, MATSHANDO T., SARATA K., BABA T., KATAYOSE Y., ASANÎT, MATSHANDO T., SARATA K., SARATA K., BADA T., KATAMONI, H., ATÎLA K., HANDA M., HAZAGA C., CARMOCO M., ANGO T., AOKÎ H., ATÎLA K., HAMAGA M., HAZAGA C., CARMOCO M., ANGO T., AOKÎ H., ATÎLA K., HAMAGA M., ICOH S., ICOH T., ICOH Y., NAWAI Y., MATSHA M., NAWAYA M., NAWASHAM M., NAWASHAM M., NAKAMAYA M., NAKAMINIA M., SADIJ M., TAKAZAKI Y., TAKAMINI Y., TAKAMINI Y., TAKAMINI Y., TAKAMINI Y., TAKAMINI Y.
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25-0CT-2004 (TrEMBLrel. 28, Last sequence update)
25-0CT-2004 (TrEMBLrel. 28, Last senotation update)
45-0CT-2004 (TrEMBLrel. 28, Last annotation update)
15-0CT-2004 (TrEMBLrel. 28, Last annotation update)
18me=0SJNBa0038B22.10;
18me=0SJNBa0038B22.10;
18me=0SJNBa0038B22.10;
18me=0SJNBa003B22.10;
18me=0SJNBa003B22.10;
28me=0SJNBa003B22.10;
28me=0SJNBa003B22.
                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2002 (TrEMBLrel. 21, Created)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2002 (TrEMBLrel. 21, Last sequence update)
01-JUN-2004 (TrEMBLrel. 26, Last annotation update)
0J1014 G12.10 protein.
Name=0J1014 G12.10;
0ryza sativa (japonica cultivar-group).
Bukaryora, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "The genome sequence and structure of rice chromosome 1.";
                                               Length 550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPWUU,J__,
Pfam; PF044094; DJF330; 1.
Pfam; PF04195; Transpossee 28; 1.
Pfam; PF04195; Transpossee 28; 1.
Pfam; PF04195; Transpossee 28; 1.
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                                                                                                   5; Indels
550 AA; 57890 MW; 18C71B4974BF0F34 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.9%; Score 62; DB 2; L
73.7%; Pred. No. 1.1e+02;
iive 0; Mismatches 3;
                                                 DB 2;
65;
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                                                                                                 2; Mismatches
                                                 62;
No.
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                                                    Score
Pred.
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                                                                                                                                                                                                    524 GPORAGAAQADGIGAGGPR 542
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                                                                                                                                                   2 GPRGAGAARASGPGGGAPR 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature 420:312-316(2002).
EMBL; AP003372; BAB89076.1; -.
                                               ch 57.9%;
1 Similarity 63.2%;
12; Conservative
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Best Local Similarity
                                                 Query Match
Best Local Similarity
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     SEQUENCE
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Toxoplasma.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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Araneomorphae; Entelegynae; Araneoidea; Tetragnathidae; Nephila.
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EMBL; AY208675; AAO43429.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57.9%; Score 62; DB 2; Length 301; 66.7%; Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                            Length 337;
                                                                                                                                                                                                                                                                                                                                                                                                                                                              6; Indels
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Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF441245; AAL32472.1; -
                                                                                                   PROSITE; PS50297; ANK REP REGION; 1.
PROSITE; PS50088; ANK REPEAT; 2.
PROSITE; PS00299; UBIQUITIN 1; FALSE NEG.
PROSITE; PS0053; UBIQUITIN 2; 1.
ANK repeat; Hypothetical profein; Polymorphism; Repeat.
DOMAIN
                                                                                                                                                                                                                                                                                                        R -> C (in dbSNP:584855).
/FTId=VAR_014400.
                                                                                                                                                                                                                                                                                                                                   TIG=VAR 014400.
EC8BA4AD414756CB CRC64;
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01-UGN-2003 (TrEMBLrel. 24, Created)
01-UGN-2003 (TrEMBLrel. 24, Last sequence update)
01-UGN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2002 (TrEMBLrel. 20, Created)
01-MAR-2002 (TrEMBLrel. 20, Last sequence update)
01-CCT-2003 (TrEMBLrel. 25, Last annotation update)
Dragline slik protein spidroin 2 (Fragment).
Nephila clavata (Joro spider).
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26;
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Pred. No.
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ANK 2.
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                                                                                                                                                                                                                                                                                                                                                             337 AA; 36714 MW;
                                                                                                                                                                                                                                                                                                                                                                                                            59.8%;
                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 65.0°
Matches 13, Conservative
                               Pfam; PF00023; Ank; 3.
PRINTS; PR01415; ANKYRIN.
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                                                                                 SM00248; ANK; 2.
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SEQUENCE
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Matches
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SEQUENCE FROM N.A.

MEDLINE=89308571; PubMed=2568356;

Fraser C.M., Arakawa S., McCombie W.R., Venter J.C.;

"Cloning, sequence analysis, and permanent expression of a human alpha
"cloning; sequence analysis, and permanent expression of a human alpha
2-adrenergic receptor in Chinese hamster ovary cells. Evidence for independent pathways of receptor coupling to adenylate cyclase attenuation and activation.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Platelet;
MEDLINES-8804-2789; PubMed=2823383;
MEDLINES-8804-2789; PubMed=2823383;
Kobilka B.K., Matsui H., Kobilka T.S., Yang-Feng T.L., Francke U.,
Caron M.G., Lefkowitz R.J., Regan J.W.;
"Cloning, sequencing, and expression of the gene coding for the human
platelet alpha 2-adrenergic receptor.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mac Z.-M., Tang K., Li B.-M., Jing N.-H.; "Cloning and expression of human alpha-2A adrenergic receptor in SYSY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REVISIONS TO 333-365.
MEDLINE-SPLO09167; PubMed=2170371;
Guyez C.A., Horstman D.A., Wilson A.L., Clark J.D., Kragoe E.J. Jr.,
Limbird L.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=10948191; DOI=10.1074/jbc.M004550200;
Small K.M., Forbes S.L., Brown K.M., Liggett S.B.;
"An Asn to Lys polymorphism in the third intracellular loop of the
human alpha 2A-adrenergic receptor imparts enhanced agonist-promoted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=PNS;
MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Castellano M., Giacche' M., Rossi F., Rivadossi F., Perani C., Beschi M., Agabiti Rosei B.; "A search for genetic variability in the human alpha-2 adrenergic
                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                         01-NOV-1988 (Rel. 09, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
55-OCT-2004 (Rel. 45, Last annotation update)
Alpha-2A adrenergic receptor (Alpha-2A adrenoceptor) (Alpha-2A adrenoredror)
Adrenoreceptor) (Alpha-2AAR subtype Cl0).
Name=ADRA2A; Synonyms=ADRA2R, ADRAR;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Liu L., Yuan L.;
"Human alpha-2A adrenergic receptor gene and the genotype of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Cloning, sequencing, and expression of the gene encoding talpha 2-adrenergic receptor. Allosteric modulation by Na+, amiloride analogs.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nucleotide and motionsickness.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND VARIANT LYS-251
                                                                                                                                                                                                                                                                                                                                                                                                                     J. Biol. Chem. 264:11754-11761(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gi coupling.";
J. Biol. Chem. 275:38518-38523(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Biol. Chem. 265:17307-17317(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         receptor on chromosome 10."
      Q9BZK1;
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                                                                                                                                                           Homo sapiens (Human)
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      P08913; Q86TH8;
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                                                                             Chow T.-Y., Hsing Y.-I., Chen C.-S., Chen H.-H., Liu S.-M.,
Chow T.-Y., Hsing Y.-I., Chen H.-C., Chen S.-K., Chen T.-R.,
Chao Y.-T., Chang S.-J., Chen H.-C., Chen S.-Y., Chen T.-R.,
Chen Y.-L., Cheng C.-H., Hunng C.-I., Han S.-Y., Hsiao S.-H.,
Hsiung J.-N., Hsu C.-H., Huang J.-J., Kau P.-I., Lee M.-C., Leu H.-L.,
Li Y.-P., Lin X.-J., Lin Y.-C., Wu S.-W., Yu C.-Y., Yu S.-W.,
Wu H.-P., Shaw J.-P., *McCombie W.R., *Spiegel L., *de la Bastide M.,
*Zutavern T., *Muller S., *Nascimento L., *Balija V., *Bali M.,
*Miller B., *Kazenberger F., *Andrade M.V., *Dike S.,
*O'Shaughnessy A., *Palmer L., *Dedhia N.;
Submitted (JUL-2004) to the BuBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=21179804; PubMed=11283372; DOI=10.1126/science.1057561; Gatesy J., Hayashi C., Motriuk D., Woods J., Lewis R.; "Extreme diversity, conservation, and convergence of spider silk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bukaryota; Metazoa; Arthropoda; Chelicerata; Arachnida; Araneae;
Araneomorphae; Entelegynae; Araneoidea; Tetragnathidae; Nephila.
NCBI_TaxID=115969;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1953;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1039;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1,1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1039 AA; 111214 MW; 856219894B2FB717 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gatesy J.E., Hayashi C.Y.;
Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AF350276; AAK30605.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1953 AA; 159383 MW; C82B4DACD043C3BD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JUN-2001 (TrEMBLrel. 17, Created)
01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
Major ampullate spidroin 2-like protein (Fragment).
Nephila inaurata madagascariensis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 61.5; DB 2;
Pred. No. 2.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 57.9%; Score 62; DB 2;
Best Local Similarity 73.7%; Pred. No. 1.1e+02
Matches 14; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT; 1953 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                               InterPro; IPR011038; Calycin.
InterPro; IPR001208; DUF390.
InterPro; IPR007321; Transposase_28.
Pfam, PP04094; DUF390; I.
Pfam, PP04195; Transposase_28, 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     322 PRGGGAARASGRRPEGAAP 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RGPRGAGAARASGPGGGAP 19
                      Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science 291:2603-2605(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 68.1.
Best Local 3; Conservative
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                                         NCBI_TaxID=39947;
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ID A2AA HUMAN
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SEQUENCE
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RESULT 10

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Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Ugdin T.B., Toshiyuki S., Carninoi P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Wuzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
Rahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Blakesley R.W., Touchman J.W., Schmutz J., Myers R.M.,
Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
"Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
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GO:0004938; F:alphaZ-adrenergic receptor activity; TAS.
GO:0015459; F:actassium channel regulator activity; TAS.
GO:001016; F:actin cytoskeleton organization and biogenesis; TAS.
GO:0001087; P:activation of MAPK; TAS.
GO:000187; P:activation of MAPK; TAS.
GO:0001878; P:cell motility; TAS.
GO:0007186; P:G-protein coupled receptor protein signalin. . ; TAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 activation by agonists.";

Mol. Pharmacol. 40:168-179(1991).

-i-FUNCTION: Alpha-2 adrenergic receptors mediate the catecholamine-induced inhibition of adenylate cyclase through the action of G proteins. The rank order of potency for agonists of this receptor is oxymetazoline > clonidine > epinephrine > norepinephrine >
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   phenylephrine > dopamine > p-synephrine > p-tyramine > serotonin = p-octopamine. For antagonists, the rank order is yohimbine > phentolamine = mianserine > chloupromazine = spiperone = prazosin > propanolol) > alprenolol = pindolol. SUBCELLULAR LOCATION: Integral membrane protein. SIMILARITY: Belongs to the G-protein coupled receptor 1 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MUTACENESIS OF ASPARTIC ACID AND SERINE RESIDUES.
MEDLINE=91342598; PubMed=1678850;
Mang C.-D., Buck M.A., Fraser C.M.;
"Site-directed mutagenesis of alpha 2a-adrenergic receptors:
Identification of amino acids involved in ligand binding and receptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WUTAGENESIS OF PHE-412.

MEDLINE-91332079; PubMed=1678390;

Suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

Suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

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suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

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suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

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suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

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suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Kobilka B.K.;

suryanarayana S., Daunt D.A., von Zastrow M., Santa B.K.;

suryanarayana S., Santa B.K.;

sur
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            receptor antagonists.";
J. Biol. Chem. 266:15488-15492(1991).
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II.) AF281300; AAF9141.1; ...
III.) AF316994; AAK01634.1; ...
II.) AF284095; AAK26743.1; ...
II.) AF032736; AAK51162.1; ...
II.) BC050414; AAK5014.2; ...
A34169; A34169.
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EMBL; M18415; AAA51664.1; -.
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1HO9; NWR; A=118-149.
1HOD; NWR; A=118-149.
1HOF; NWR; A=118-149.
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MIM; 10
GO; GO:
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EMBL;
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PDB;
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PDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                      By similarity.
S-palmitoyl cysteine (By similarity).
Implicated in ligand binding.
Implicated in actechol agonist binding and receptor activation.
Implicated in catechol agonist binding and receptor activation.
N -> K (rare polymorphism; frequency in caucasians 0.004 and in African-Americans 0.05; 40% increase in agonist-promoted Gi coupling; dbSNP:1800035).
/FTIG=VAR 014957.
D-N: No Change in binding affinity, eliminates guanine nucleotide-sensitive agonist binding.
                                                                                                                                 R PROSITE; PROJOZJ7; G-PROTEIN_RECEP F1 1; 1.

R PROSITE; PSO262; G-PROTEIN_RECEP F1 2; 1.

W 3D-structure; Direct protein sequencing; G-protein coupled receptor; G-protein; Lipoprotein; B-protein sequencing; G-protein; C-protein; Multigene family; Palmitate; M-prosphorylation; Polymorphism; Transmembrane.

T PRANSMEM 34 59 1 (Potential).

T TRANSMEM 71 96 2 (Potential).

T TRANSMEM 107 129 3 (Potential).

T TRANSMEM 130 149 Cytoplasmic (Potential).

T TRANSMEM 150 173 4 (Potential).

T TRANSMEM 174 192 Extracellular (Potential).

T TRANSMEM 193 217 5 (Potential).
 . .; TAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in adenylate cyclase activity.
D->N: Lower affinity for agonists.
Bliminates guanine nucleotide-sensitive agonist binding.
S->A: Lower affinity for agonists. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                D->N: No binding to yohimbine. Increase
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GO; GO:0007194; P:negative regulation of adenylate cyclase ac. . . GO; GO:0008284; P:positive regulation of cell proliferation; TAS. GO; GO:0007265; P:RAS protein signal transduction; TAS. GO; GO:0007265; P:RAD protein signal transduction; TAS. GO; GO:0007265; P:Signal transduction; TAS. InterPro; IPR001946; A receptorAZAa. InterPro; IPR001946; A receptorAZAa. PFGO01; 7tm 1; 1. PRM property PF0001; 7tm 1; 1. PRM property PR00558; ADRENGCAZAR. PRINTS; PR005237; GPCRRHODOPSN.
                                                                                                                                                                                                                                                                                                                                                                                               Cytoplasmic (Potential).
N-linked (GlcNAc. . .) (Potential).
N-linked (GlcNAc. . .) (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  10-0CT-2003 (Rel. 42, Created)
10-0CT-2003 (Rel. 42, Last sequence update)
05-UTL-2004 (Rel. 44, Last annotation update)
Par upstream element binding protein 2 (FUSE binding protein 2)
type splicing regulatory protein) (KSRP) (MAP2 RNA trans-acting protein 1) (MARTA1).
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                                                                                                                                                                                                    Extracellular (Potential).

1 (Potential).

Cytoplasmic (Potential).

2 (Potential).

Extracellular (Potential).

3 (Potential).

Cytoplasmic (Potential).

4 (Potential).

Extracellular (Potential).

5 (Potential).

Cytoplasmic (Potential).

5 (Potential).

6 (Potential).
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ilarity 63.6%;
Conservative
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Best Local Similarity
Matches 14; Conserv
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CARBOHYD
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25-OCT-2004 (Rel. 45, Created)
25-OCT-2004 (Rel. 45, Last sequence update)
25-OCT-2004 (Rel. 45, Last amnotation update)
Zinc finger A20 domain containing protein ? (BC 3.-.-.-) (Zinc finger
                                                                                                                                                                                                      Evans P.C., Coadwell W.J., Kilshaw P.J.;

"Isolation of a novel murine gene, Cezanne 2.";

Submitted (PEB-2002) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: Has deubiquitinating activity that is directed towards Lys-48 or Lys-63-linked polyubiquitin chains. Hydrolyzes both linear and branched forms of polyubiquitin (By similarity).

-!- SUBCELLULAR LOCATION: Cytoplasmic and nuclear (By similarity).

-!- SIMILARITY: Contains 1 A20-type zinc finger.

-!- SIMILARITY: Contains 1 A20-type zinc finger.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEROPS; C64.002; -. MEROPS; MG1384.
MG1, MG1:218505; A0430384.
DITCETPRO: IPR003323; OTU.
PF02338; OTU; 1.
PR0521TE; PS50802; OTU; 1.
Hydrolase; Nuclear protein; Thiol protease; Ubl conjugation pathway; Zinc-finger.
                                                                                                   Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AJ430384; CAD23048.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100796 MW;
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nes 12; Conservative
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                                                                                              Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  926 AA;
                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201
4497
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209
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                                                                                                                                                                  Rehbein M., Wege K., Buck F., Schweizer M., Richter D., Kindler S.;
"Molecular characterization of MARTAL, a protein interacting with the
domedritic targeting element of MAP2 mRNAB.";
J. PUNCTION: Part of a ternary complex that binds to the downstream
control sequence (DCS) of the pre-mRNA. Mediates exon inclusion in
transcripts that are subject to tissue-specific alternative
splicing. May interact with single-stranded DNA from the far-
upstream element (FUSE). May activate gene expression (By
almilarity). Binds to the dendritic targeting element and may play
a role in mRNA trafficking.
                                                                                                                                                                                                                                                                                                                                               -!- SUBUNIT: Part of a ternary complex containing FUBP2, PTBP1, and HNRPH1 (By similarity).
-!- SUBCELLULAR LOCATION: Nuclear. A small proportion is also found in the cytoplasm of neuronal cell bodies and dendrites.
-!- SIMILARITY: Contains 4 KH domains.
                                                                                                     SEQUENCE FROM N.A., SEQUENCE OF 73-87; 89-108 AND 475-486, SUBCELLULAR LOCATION, AND FUNCTION.
TISSUE=Brain;
                      Rattus norvegicus (Rat).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Direct process sequencing; DNA-binding; mRNA processing;
mRNA splicing; mRNA transport; Nuclear protein; Repeat; RNA-binding;
Transacting factor; Transcription regulation; Transport.
DOMAIN 145 209 KH 2.
DOMAIN 324 300 KH 2.
DOMAIN 323 387 KH 3.
DOMAIN 425 492 KH 4.
DOMAIN 572 685 4 X 12 AA imperfect repeats.
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; Mismatches 7; Indels
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Ala/Gly/Pro-rich.
482C7A765C60EE4A CRC64;
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HSSP; O96AE4; 1J4W.
GO; GO:0005515; F:protein binding; IPI.
InterPro; IPR004087; KH.
InterPro; IPR004088; KH_Lype_1.
                                                                                                                                                     MEDLINE=22246918; PubMed=12358751;
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SMART; SM00322; KH; 4.
PROSITE; PS50084; KH_TYPE_1; 4.
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           Name=Fubp2; Synonyms=Khsrp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 61.1
Matches 11; Conservative
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                                                                       NCBI_TaxID=10116;
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Gaps
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Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
05-JUJ-2004 (Rel. 44, Last annotation update)
Ephrin type-A receptor 5 precursor (EC 2.7.1.112) (Tyrosine-protein Name-Ephas; Synonyms-Ehk-1) (EPH homology kinase-1).
Name-Ephas; Synonyms-Ehk-1, Ekhl;
Rattus norvegicus (Rat).
                                                                                                                                                                   ö
                                                                                                             56.1%; Score 60; DB 1; Length 926; 60.0%; Pred. No. 1.7e+02; ive 1; Mismatches 7; Indels
By similarity.
By similarity.
W: 4D6BD05A0410BED9 CRC64;
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                                                                                                                                                                                                                                                                      739 RAARAAGGAASPGPGGGARR 758
                                                                                                                                                                                                                    1 RGPRGAGAARASGPGGGAPR 20
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926 AA.

STANDARD;

CEZ2 MOUSE ID CEZ2 MOUSE AC Q8R554;

RESULT 13

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Nuclear localization signal (Potential).

TRAF-binding (By similarity) Catalytic (By similarity).

Ubiquitin-binding (By similarity) A20-type (By similarity). By similarity.

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KCNSHAGVCEECGGHVRYLPQQIGLKNTSVMADDPLAHINY
TFEIEAVNGVSDLSPGTRQYVSVNVTTNQAA -> T (in
isoform 3, isoform 4, isoform 5 and
isoform 6,
FTIGH-VSP 003002.
SGSCCECGGGRASSLCAVAHPSLIW -> R (in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VCRPGFFKASPHSQTCSKCPPHSYTHEEASTSCVCEKDYFR
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                                                                                                                                                                                                                                                                                                                                                                ATP (By similarity).
By similarity.
Phosphotyrosine (by autocatalysis) (By
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Phosphotyrosine (by autocatalysis) (By
                                                                                                                                                                           Alternative splicing, ATP-binding, Glycoprotein, Phosphorylation, Receptor, Repeat, Signal, Transferase, Transmembrane, Tyrosine-protein kinase.
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111007 MW; 1AED42C99693C574 CRC64;
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Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               similarity).

N-linked (GLONAC...) (C. N-linked (GLONAC...) (C. N-linked (GLONAC...) (N-linked (GLONAC...) (N-linked (GLONAC...) (N-linked (GLONAC...) (N-linked (GLONAC...) (N-linked (GLONAC...) (C. N-linked (GLONAC...)
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/FTId=VSP_003003.
                                                                                                                                                                                                                                                                        Cytoplasmic (Potential)
PRINTS; PR00109; TYRKINASE.

ProDom; PD001495; EBPLIN receptor; 1.
SMART; SM00615; EPH_IDG; 1.
SMART; SM00615; EPH_IDG; 1.
SMART; SM001060; FN3; 2.
SMART; SM0019; TYRKc; 1.
PROSITE; PS50818; FN3; 2.
PROSITE; PS50819; FN3; 2.
PROSITE; PS50011; PROTEIN KINASE_DOM; 1.
PROSITE; PS50011; PROTEIN KINASE_DOM; 1.
PROSITE; PS00109; PROTEIN KINASE_TYR; 1.
PROSITE; PS00109; RECEPTOR TYR KIN V.1; 1.
PROSITE; PS00109; PROTEIN KINASE TYR; 1.
                                                                                                                                                                                                                                                                                                Fibronectin type-III
Fibronectin type-III
Protein kinase.
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G -> A (in Ref. 2).

G -> A (in Ref. 2).

G -> A (in Ref. 2).

T -> I (in Ref. 2).

T -> I (in Ref. 2).
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61.9%;
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Best Local Similarity 61.9
Matches 13, Conservative
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                                                                                                                   STRAIN=Sprague-Dawley, TISSUE-Brain, MEDLINE=94067777; PubMed=7504232; Maisonpierre P.C., Barrezueta N.X., Yancopoulos G.D.; Maisonpierre P.C.: two novel members of the Eph receptor-like tyrosine kinase family with distinctive structures and neuronal expression."; Oncogene 8:3277-3288(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isodd=P54757-6; Sequence=VSP 003000, VSP 003002; IISSUE SPECIFICITY: Almost exclusively expressed in the nervous system. Predominantly expressed in neurons. SIMILARITY: Belongs to the Tyr protein kinase family. Ephrin receptor subfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                 Isold=P54757-5; Sequence=VSP_003001, VSP_003002, VSP_003003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -1- SIMILARITY: Contains 2 fibronectin type III domains.
                                                                                                                                                                                                                                                                                                                                                                                                        Isold=P54757-4; Sequence=VSP_003002, VSP_003003;
                                                                                                                                                                                                                                                                tyrosine phosphate.
-!- SUBCELLULAR LOCATION: Type I membrane protein.
-!- ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                     Event=Alternative splicing; Named isoforms=6;
        [1]
SEQUENCE FROM N.A. (ISOFORMS 1; 2; 3; 4 AND 5)
                                                                                                                                                                                                                                                                                                                                                        IsoId=P54757-2; Sequence=VSP_003001;
                                                                                                                                                                                                                                                                                                                                                                                  IsoId=P54757-3; Sequence=VSP_003002;
                                                                                                                                                                                                                                                                                                                             Isold=P54757-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR006209; EGF_like.
InterPro; IPR001090; EGF_like.
InterPro; IPR001090; FDNIII, receptor.
InterPro; IPR0019561; FN III-like.
InterPro; IPR001957; FN III-like.
InterPro; IPR001962; FN III-like.
InterPro; IPR001903; Grow fac_recept.
InterPro; IPR001009; Kinase like.
InterPro; IPR001009; Kinase like.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase.
InterPro; IPR001245; Tyr_pkinase_AS.
InterPro; IPR001456; Tyr_pkinase_AS.
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Pfam; PF00536; SAM; 1.
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InterPro; IPR006209; E
InterPro; IPR001090; E
InterPro; IPR003961; F
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PIR; S51603; S51603.
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(By

(Potential). (Potential). (Potential).

(Potential)

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Gaps

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-88284368; PubMed-2840351; DOI=10.1016/0378-1119(88)90411-8; Zeviani M.; Sakoda S., Sherbany A., Nakase H., Rizzuto R., Samitt C.E., Dimauro S., Schon E.A.; "Sequence of cDNAs encoding subunit Vb of human and bovine cytochrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=91257815; PubMed=1646156; Lomax M.1., Heleh C.L., Darras B.T., Francke U.; Structure of the human cytochrome c oxidase subunit Vb gene and chromosomal mapping of the coding gene and of seven pseudogenes."; Genomics 10:1-9(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hughes G.J., Frutiger S., Paquet N., Pasquali C., Sanchez J.-C., Tissot J.-D., Bairoch A., Appel R.D., Hochstrasser D.F.; "Human liver protein map: update 1993."; "Bectrophoresis 14:1212(1993).
-i- FUNCTION: This protein is one of the nuclear-coded polypeptide chains of cytochrome c oxidase, the terminal oxidase in
                                                                                                                                                                                                                                                                                                                                                                                                        Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SUBCELLUIAR LOCATION: Mitochondrial inner membrane.
                                                                                                                                                                                       01-JUL-1989 (Rel. 11, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Cytochrome c oxidase polypeptide Vb, mitochondrial precursor (EC 1931).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                    129 AA
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GPRGAGRRATQGRGGGGDTPR 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mouse cDNA sequences.
                                                                                                                                                                    STANDARD;
                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene 65:1-11(1988).
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TISSUE-Liver;
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                                                                                                                                                              COXB HUMAN S
P10606; Q96J18;
01-JUL-1989 (Rel
                                                                                                                                                                                                                                                                                                                                                         Name=COX5B;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       c oxidase."
                                                                                                                                     COXB HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            and
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between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                     Cytochrome c oxidase polypeptide Vb. Zinc (Potential). Zinc (Potential).
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                                                                                                                                                                                                                                                                                                                                                                                                          Score 59; DB 1; Length 129;
Pred. No. 38;
1; Mismatches 7; Indels
                                                                                                                                                                                                                                                                               Direct protein sequencing, Inner membrane, Mitochondrion,
Oxidoreductase, Transit peptide, Zinc
                                                                                                                                                                                                                                                                                                                                                                       109 E -> Q (in Ref. 1).
13696 MW; 877BF4CD334AC931 CRC64;
                                                                                                                                                                                       Zinc (Potential)
                                                                                                                                                                                                                                                                                                          Mitochondrion.
                                                                                                 EMBL; M59250; AAA52060.1; -.
EMBL; M19961; AAA52061.1; -.
EMBL; BC006229; AAH06229.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                55.1%;
                                                                                                                                        PIR; JT0324; OTHU5B.
SWISS-2DPAGE, P10606; HUMAN.
Genew; HONC:2269; COX5B.
H-InvDB; HIX0002290; -
                                                                                                                                                                                                                                                                                                                                                                                                                                         11; Conservative
                                                                                                                                                                                                                                                                                                                                               113
116
109
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                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
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Search completed: September 11, 2005, 01:42:50 Job time : 28.4762 secs

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Scoring table:

Searched:

Database

Perfect score: Sequence:

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Sequence 1312, A Sequence 12312, A Sequence 5708, Ap Sequence 23622, A Sequence 23951, A Sequence 23198, A Sequence 23198, A Sequence 23198, A Sequence 3, Appli Sequence 5, Appli Sequence 5, Appli Sequence 5, Appli Sequence 10, Appli Sequence 11, Appli Sequence 12, Appli Sequence 12, Appli Sequence 12, Appli
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  US-09-270-767-43018
US-09-902-540-12312
US-09-925-0116-708
US-09-252-991A-32326
US-09-252-991A-23951
US-09-252-991A-23951
US-09-949-016-8825
US-09-949-016-8825
US-09-949-016-8825
US-09-464-377-2
US-09-464-377-3
US-09-464-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: Leth, Bernard
APPLICANT: Leth, Bernard
APPLICANT: Locals, Sophia
APPLICANT: Godelaine, Daniele
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: LL-1 TUMOR SPECIFIC GENES
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
ADDRESSEE: Wolf, Greenfield & Sacks, P.C.
STREET: 600 Atlantic Avenue
CITY: Boston
STATE: MA
COUNTRY: UGA
ZIP: 02210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,495
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 107; DB 2;
Pred. No. 2.9e-05;
; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM FC compatible
OPERATING SYSTEM: PC-DOS/NG-DOS
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TELECOMUNICATION INFORMATION:
TELEPHONE: 617-720-3500
TELEFAX: 617-720-3441
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 180 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 9, Application US/08791495; Patent No. 5811519
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        62
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1 Similarity 100.0%; Pi
20; Conservative 0;
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    TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 20; Conservat
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US-08-791-495-9
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Sequence 8, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 5, Appli
Sequence 5, Appli
Sequence 27091, A
Sequence 27091, A
Sequence 27091, A
Sequence 2, Appli
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Sequence 24923, A
Sequence 21, Appl
Sequence 21, Appl
Sequence 2, Appli
Sequence 17335, A
Sequence 17335, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 9, Appli
                                                                                                                                                                                (without alignments)
203.588 Million cell updates/sec
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                                                                                                                                                         September 11, 2005, 01:30:14 ; Search time 7.33333 Seconds
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Sequence 30,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 15,
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/cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/1/iaa/RB_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PcTUS_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PcTUS_COMB.pep:*
                         GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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US-09-392-714-25
US-09-31-82-65-546D-15
US-09-849-602-30
US-09-849-602-30
US-09-341-82-8-8
US-08-791-495-7
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US-09-341-82-8-7
US-09-49-016-77-29
US-09-49-016-77-29
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US-08-57-8-684-2
US-08-46-6-37-8-103
US-08-57-8-684-2
US-08-46-6-37-8-103
US-08-25-994-2-49-3
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US-09-949-016-8392
US-09-252-991A-17335
US-09-252-991A-28344
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                       513545 segs, 74649064 residues
                                                                                                               OM protein - protein search, using sw model
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
                                                                                                                                                                                                                                                                                            0; Indels
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100.0%; Pred. No. 2.9e-05;
cive 0; Mismatches 0;
                                                                                                                                                                                                                                                Score 107; DB 4;
Pred. No. 2.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Scanlan, Matthew J.
APPLICANT: Scanlan, Matthew J.
APPLICANT: Old, Lloyd J.
APPLICANT: Chen, Yao-Tseng
ITILE OF INVENTION: Colon Cancer Antigen Panel
FILE REFERENCE: L0461/7105 (JRV)
CURRENT APPLICATION NUMBER: US/09/849,602
CURRENT FILING DATE: 2001-05-04
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin version 3.0
                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQ ID NOS: 14
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                TOPOLOGY: linear
SEQUENCE DESCRIPTION: SEQ ID NO: 15
                                           TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 9, Application US/09341829A
; Patent No. 6794131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; Sequence 30, Application US/09849602; Patent No. 6794501
                     TELECOMMUNICATION INFORMATION
                                                        TELEFAX: (212) 318-3400
INFORMATION FOR SEQ ID NO: 15:
SEQUENCE CHARACTERISTICS:
LENGTH: 180 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                        100.0%; Scc
100.0%; Pre
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Best Local Similarity 100.
Matches 20; Conservative
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Matches 20; Conservative
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LENGTH: 180
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Homo sapiens
                                                                                                                                                                                                           US-09-165-546D-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-09-341-829A-9
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Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 180;
                                                                                                                     GENERAL INFORMATION:
APPLICANT: Scanlan, Matthew J.
APPLICANT: Gure, All Jo.
APPLICANT: Gure, All Jo.
APPLICANT: Williamson, Barbara
APPLICANT: Williamson, Barbara
APPLICANT: Old, Lloyd J.
TITLE OF INVENTION: Therefor
TITLE OF INVENTION: Therefor
FILE REFERENCE: LO461/7062
CURRENT APPLICATION NUMBER: US/09/392,714A
CURRENT FILING DATE: 1999-09-09
ERALIER APPLICATION NUMBER: PCT/US98/14679
ERALIER PILING DATE: 1998-07-15
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 10158
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
100.0%; Score 107; DB 4;
Best Local Similarity 100.0%; Pred. No. 2.9e-05;
Matches 20; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
STREET: 666 Fifth Avenue
CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOFTWARE: Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-Oct-1998
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 09/062,422
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: 08 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Hanson, No. 6723832man D. REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 15, Application US/09165546D Patent No. 6723832 GENERAL INFORMATION:
                                                                                Sequence 25, Application US/09392714A Patent No. 6686147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 RGPRGAGAARASGPGGGAPR 20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
US-09-165-546D-15
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Query Match

94.4%; Score 101; DB 4; Length 180;
Best Local Similarity 95.0%; Pred. No. 0.00014;
Matches 19; Conservative 0; Mismatches 1; Indels
TITLE OF INVENTION: Associated Proteins, Uses Thereof, TITLE OF INVENTION: Truncated Forms of NY-ESO-1, and HLA TITLE OF INVENTION: Binding Peptides Derived Therefrom NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
CARRESPONDENCE ADDRESS:
CARRESPO
                                                                                                                                                                                                                                                                                                                                                    ZIP: 10103
COMPUTER READABLE FORM:
MEDIUM TYPES Diskette, 3.5 inch, 144 kb storage.
COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
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Patent No. 5811519
GENERAL INFORMATION:
APPLICANT: Leth, Bernard
APPLICANT: Lucas, Sophie
APPLICANT: Benet, Charles
APPLICANT: Bool-laine, Daniele
APPLICANT: ADON-RAIleur, Thierry
TITLE OF INVENTION: L. I TUMOR SPECIFIC GENES
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Wolf, Greenfield & Sacks, P.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: LUD 5466.3 TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3168
TELEPHONE: (212) 752-5958
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/751,798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/062,422
FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/725,182
FILING DATE: October 3, 1996
ATOMNEY/AGENT INFORMATION:
ATOMNE: HANSON, NO. 6525177man D.
REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RGPRGAGAARASGPGGGAPR 20
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MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                             CITY: New York City
STATE: New York
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   amino acid
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US-09-751-798-8
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STREET: 60
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Sequence 8, Application US/08937263B

Patent No. 6274145

GENERAL INFORMATION:

APPLICANT: Chen, Yao-Tseng; Scanlan, Matthew;

APPLICANT: Gure, Ali; Old, Lloyd J.; Jager, Blke;

APPLICANT: Alexander, Knuth; Drijfhout, Jan W.

TITLE OF INVENTION: ISCOLATED NUCLEIC ACID MOLECULE

TITLE OF INVENTION: ITSELF, AND USES THEREOF

NUMBER OF SEQUENCES:

CORRESPONDENCE ADDRESS:

ADDRESSEE: Fulbright & Jaworski, L.L.P.

STREET: 666 Fifth Avenue

COUNTRY: USA

COUNTRY: USA
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APPLICANT: Chen, Yao-tseng; Scanlan, Matthew;
APPLICANT: Knuth, Alexander; Old, Lloyd J.
TITLE OF INVENTION: Antibodies Which Bind to NY-ESO-1 Cancer
                                                                     Length 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 101; DB 3; Length 180;
Pred. No. 0.00014;
0; Mismatches 1; Indels
                                                                                                                                          0; Indels
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COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                     100.0%; Score 107; DB 4;
100.0%; Pred. No. 2.9e-05;
rative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/937,263B
FILING DATE: September 15, 1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORMATION:
NAME: Sinn, Eric, Patent Agent
REGISTRATION NUMBER: LUD 5466.1
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                               43 RGPRGAGAARASGPGGGAPR 62
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Patent No. 6525177
GENERAL INFORMATION:
                                                                                                                                                                                                                1 RGPRGAGAARASGPGGGAPR 20
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95.0%;
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OPERATING SYSTEM: PC-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 95.0°
Matches 19; Conservative
                                                                                                                                          20; Conservative
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US-08-937-263B-8
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                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                     RESULT 6
US-08-937-263B-8
   US-09-849-602-30
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                                                                                                                                          Matches
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; Sequence 5, Application US/09341829A
; Patent No. 6794131
; GENERAL INFORMATION:
    APPLICANT: Lucas, Sophie
; APPLICANT: De Smet, Charles
; APPLICANT: Boon-Falleur, Thierry
; TITLE OF INVENTION: LAGE-1 TUMOR ASSOCIATED NUCLEIC ACIDS
; FILE REFERENCE: L0461/7066
; CURRENT APPLICATION NUMBER: US/09/341,829A
; CURRENT PILING DATE: 1999-10-18
; PRIOR APPLICATION NUMBER: US 08/791,495
; PRIOR APPLICATION NUMBER: PCT/US98/01445
; NUMBER OF TOWER POLICE ACIDS
; MINDER OF TOWER POLICE ACIDS
; PRIOR APPLICATION NUMBER: PCT/US98/01445
; NUMBER OF TOWER POLICE ACIDS
; NUMBER OF TOWER POLICE ACIDS
; NUMBER OF TOWER POLICE ACIDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 92.5%; Score 99; DB 2; Length 210; Best Local Similarity 95.0%; Pred. No. 0.00027; Matches 19; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: 1BM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,495
Wolf, Greenfield & Sacks, P.C.
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SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 5
LENGTH: 210
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                                                                                                                                                                                                                                                                                                                                                                                                     APPLICALL.
APPLICALL.
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461
TELECHONE: 617-720-3500
"FILEPHONE: 617-720-3500
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                                   600 Atlantic Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     : 210 amino acids
amino acid
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ORGANISM: Homo sapiens
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          Abbar
STREET: but
                                                                                                                                           USA
                                                                                                                                       COUNTRY: US
ZIP: 02210
   ADDRESSEE:
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US-09-341-829A-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-09-341-829A-5
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| FALENT NO. 0.794121
| APPLICANT: Leth, Bernard
| APPLICANT: Lucas, Sophie
| APPLICANT: Lucas, Sophie
| APPLICANT: Godelane, Daniele
| APPLICANT: Boon-Falleur, Thierry
| TITLE OF INVENTION: LAGE-1 TUMOR ASSOCIATED NUCLEIC ACIDS
| FILE REFERENCE: Lode1/7066
| CURRENT FILING DATE: 1999-10-18
| PRIOR APPLICATION NUMBER: US 08/791,495
| PRIOR APPLICATION NUMBER: PCT/US98/01445
| NUMBER OF SEQ ID NOS: 14
| SOFTWARE: FastSEQ for Windows Version 3.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 180;
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Sequence 5, Application US/08791495
Patent No. SB11519
GENERAL INFORMATION:
APPLICANT: Leth, Bernard
APPLICANT: Locas, Sophie
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION:
TUTLE OF INVENTION: LL-1 TUMOR SPECIFIC GENES
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 92.5%; Score 99; DB 2; I Best Local Similarity 95.0%; Pred. No. 0.00023; Matches 19; Conservative 0; Mismatches 1.
APPLICAL...
FILING DATE:
CLASSIFICATION: 435
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAMM: Van Ameterdam, John R.
REGISTRATION NUMBER: 40,212
REFERENCE/DOCKET NUMBER: L0461/7005
TELECOWMUICATION INFORMATION:
TELEPAX: 617-720-3500
TELEPAX: 617-720-2441
INFORMATION FOR SEQ ID NO: 7:
SEQUENCY: 100 anino acids
TYPE: anino acid
TYPE: anino acid
TYPE: anino acid
TYPE: anino acid
TYPE: ALPOLOGY: linear
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Patent No. 6794131
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43 RGPRGAGARASGPRGGAPR 62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    , MOLECULE TYPE: protein US-08-791-495-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-09-341-829A-7
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Gaps

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CURRENT FILING DATE: 2001-07-10
PRIOR APPLICATION NUMBER: 60/217,883
PRIOR FILING DATE: 2000-07-10
NUMBER OF SEQ ID NOS: 16825
SEQ ID NO 13196
LENGTH: 366
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61.1%;
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; ORGANISM: Myxococcus xanthus
US-09-902-540-13196
                                                                                                                                                                                                                  Query Match
Best Local Similarity 66.74
Best Local Similarity 66.74
Conservative
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Best Local Similarity 61.1
Matches 11; Conservative
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US-09-949-016-7729
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                                                               GENERAL INFORMATION:
APPLICANT:
MARC J. RUBENFIEL G L 31.
APPLICANT:
MATC J. RUBENFIEL AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: ARENGINOSA FOR DIAGNOSTICS AND THERAPEUTICS.
FILE REPERRNCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT APPLICATION NUMBER: US 60/074,788
PRIOR PLILING DATE: 1999-02-18
PRIOR PLILING DATE: 1999-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 25681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 27091
Sequence 27091
Sequence 27091
Sequence 27091, Application US/09252991A
Sequence 27051, Application US/09252991A
Sequence 27051, Application US/09252991A
Sequence 10. 6551795
SERBRAL INFORMATION:
NUMBER: NUMBER: NUMBER: NUMBER: US/091/252, 991A
TITLE OF INVERTION: ABELICATION NUMBER: US/091/252, 991A
CURRENT APPLICATION NUMBER: US/091/252, 991A
PRIOR APPLICATION NUMBER: US/001/4, 788
PRIOR FILING DATE: 1999-02-18
PRIOR PLING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US/0/94,190
PRIOR APPLICATION NUMBER: US/0/94,190
PRIOR APPLICATION NUMBER: US/0/94,190
PRIOR SEQ ID NOS: 33142
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Patent No. 683347
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Gladen, Barry S.
APPLICANT: Slater, Steven C.
APPLICANT: Slater, Steven C.
APPLICANT: Wiegand, Roger C.
TITLE OF INVENTION: Myxococcus xanthus Genome Sequences and Uses Thereof FILE REFERENCE: 38-10(15849)B
CURRENT APPLICATION NUMBER: US/09/902,540
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                      Sequence 25681, Application US/09252991A
Patent No. 6551795
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
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Best Local Similarity 63.67
Marches 14; Conservative
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US-09-902-540-13196
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LENGTH: 160
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Sequence 7729, Application US/09949016

Sequence 7729, Application US/09949016

Sequence 7729, Application US/09949016

GENERAL INFORMATION:

APPLICANT: VENTER, J. Craig et al.

TITLE OF INVENTION: POLYWORPHISMS IN KNOWN GENES ASSOCIATED

TITLE OF INVENTION: WITH HUMAN DISEASE, METHODS OF DETECTION AND USES THEREOF

FILE REPERENCE: CL001307

CURRENT APPLICATION NUMBER: US/09/949,016

CURRENT FILING DATE: 2000-04-14

PRIOR PELILNG DATE: 2000-10-20

PRIOR FILING DATE: 2000-10-20

PRIOR FILING DATE: 2000-10-03

PRIOR FILING DATE: 2000-09-08

NUMBER OF SEQ ID NOS: 207012

SOFTWARE: PSEC FOR Windows Version 4.0

SEQ ID NO 7729
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                                               Gaps
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Score 60; DB 4; Length 366;
Pred. No. 11;
                                               Indels
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Pred. No. 22;
0; Mismatches
                                               1; Mismatches
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Sequence 7, Appli Sequence 3, Appli Sequence 3, Appli Sequence 27, Appl Sequence 1404, Ap Sequence 1404, Ap Sequence 1414, Appl Sequence 8, Appli Sequence 14, Appli Sequence 14, Appl Sequence 6, Appli Sequence 75, Appl Sequence 75, Appli Sequence 76, Appli

Sequence 496, 1 Sequence 496, 1 Sequence 496, 1 Sequence 1436,

Sequence

Perfect score:

Sequence:

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Run on:

Scoring table:

Minimum DB e Maximum DB e

Database

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Length 179;
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llarity 100.0%; Pred. No. 0.00057;
Conservative 0; Mismatches 0;
S US-10-837-217-11

S US-10-877-373-9

S US-10-873-866-1270

T US-10-895-523-3

S US-10-895-523-3

S US-10-182-506A-3

S US-10-182-506A-3

US-10-67-064-74

US-09-821-883-27
                                                                                                          Sequence 202, Application US/10482029
Publication No. US20050037445A1
GENERAL INFORMATION:
APPLICANT: ODIN medical A/S
ITILE OF INVENTION: Oncology drug innovation
FILE REPERENCE: P 573 PC00
CURRENT APPLICATION UNMER: US/10/482,029
CURRENT FILING DATE: 2003-12-29
NUMBER OF SEQ ID NOS: 437
SOFTWARE: Patentin version 3.1
SEQ ID NO 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 30, Application US/09849602; Publication No. US20030165834A1; GENERAL INFORMATION: APPLICANT: Scanlan, Matthew J. APPLICANT: Old, Lloyd J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            20
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TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
Matches 20; Conser
 US-10-482-029-202
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 Query Match
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3, Appli
74, Appl
386, App
832, App
139, App
111, Appl
                                                                                   )5 ; Search time 27.0476 Seconds (without alignments) 291.657 Million cell updates/sec
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Sequence 3
Sequence 7
Sequence 3
Sequence 3
Sequence 1
Sequence 1
Sequence 1
Sequence 1
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           GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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US-09-849-602-30
US-10-207-655-71
US-10-026-066-3
US-10-117-937-74
US-10-295-027-386
US-10-296-734-832
US-10-188-832-139
US-10-751-088-15
US-10-751-088-15
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                                                                                                                                                                                                                           1777461 seqs, 394431504 residues
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                                                                                   September 11, 2005, 01:43:05
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Maximum Match 100%
Listing first 45 summaries
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                                                             - protein search, using sw model
                                                                                                                                                             1 RGPRGAGAARASGPGGGAPR 20
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Gapop 10.0 , Gapext 0.5
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seq length: 200000000
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APPLICANT: Watson, Susan R.
APPLICANT: Bos Biotechnology, Inc.
TITLE OF INVENTION: Methods of Diagnosis of Cancer, Compositions and
TITLE OF INVENTION: Methods of Screening for Modulators of Cancer
FILE REFERENCE: 018501-012500US
FULR REFERENCE: 018501-012500US
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100.0%; Pred. No. 0.00058;
iive 0; Mismatches 0;
                                                                                                                                                                             Query Match
Best Local Similarity 100.0%; Pred. No. 0.00058;
Matches 20; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                            SCHOOL OF A PAPILICATION US/10117937

PUBLICATION NO. US20030220239A1

GENERAL INPOWNATION:

APPLICANT: SIMARD, John, J.L.

APPLICANT: SIMARD, John, J.L.

APPLICANT: LIU, Liping

APPLICANT: LIU, Liping

TITIER OF INVENTION: EPITOPE SEQUENCES

FILE REFERENCE: CTLIMM. 0.27A

CURRENT APPLICATION NUMBER: US/10/117, 937

CURRENT PILICE DATE: 2002-04-04

PRIOR APPLICATION NUMBER: US 60/282, 211

PRIOR APPLICATION NUMBER: US 60/337, 017

PRIOR APPLICATION NUMBER: US 60/363, 210

PRIOR APPLICATION NUMBER: US 60/363, 210

PRIOR FILING DATE: 2001-11-07

NUMBER: OF SEQ ID NOS: 602

SEQ ID NO 74
NUMBER OF SEQ ID NOS: 89
SOFTHARRE: FastSEQ for Windows Version 4.0
SEQ ID NO 3
LENGTH: 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 386, Application US/10295027; Publication No. US20030232350A1; GENERAL INFORMATION:
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APPLICANT: AZiz, Nacasha
APPLICANT: Ginsberg, Wendy M.
APPLICANT: Gish, Kurt C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Glynne, Richard
Hevezi, Peter A.
Mack, David H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 20; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                               ORGANISM: Homo sapiens
US-10-026-066-3
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APPLICANT:
                                                                                            TYPE: PRT
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Publication No. US20030118592A1
GENERAL INFORMATION
APPLICANT: Ledbetter, Jeffrey A.
APPLICANT: Hayden-Ledbetter, Martha S.
TITLE OF INVENTION: BINDING DOMAIN-IMMUNOGLOBULIN FUSION PROTEINS
FILE REFERENCE: 390069-4010.
CURRENT APPLICATION NUMBER: US/10/207,655
NUMBER OF SEQ ID NOS: 426
SOFTWARE: PATENTIN Version 3.0
SEQ ID NO 71
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APPLICANT: Diamond, David C.
TITLE OF INVENTION: EPITOPE SYNCHRONIZATION IN ANTIGEN
TITLE OF INVENTION: EPITOPE SYNCHRONIZATION IN ANTIGEN
TITLE OF INVENTION: PRESENTING CELLS
FILE REFRENCE: CTLIMM.121CPIC
CURRENT FILING DATE: 2001-12-07
PRIOR APPLICATION NUMBER: 09/561,074
PRIOR APPLICATION NUMBER: 09/561,572
PRIOR FILING DATE: 2000-04-28
PRIOR PRILING DATE: 2000-04-28
PRIOR PRILING DATE: 2000-04-28
PRIOR PRILING DATE: 2000-04-28
PRIOR FILING DATE: 2000-04-28
PRIOR RELING DATE: 2000-04-28
PRIOR FILING DATE: 2000-04-28
PRIOR PRILING DATE: 2000-04-28
PRIOR RELING DATE: 2000-04-28
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Pred. No. 0.00058;
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100.0%; Score 107; DB 10;
Best Local Similarity 100.0%; Pred. No. 0.00058;
Matches 20; Conservative 0; Mismatches 0;
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                       APPLICANT: Chen, Yao-Teeng
TITLE OF INVENTION: Colon Cancer Antigen Panel
FILE REFERENCE: L0461/7105 (JRV)
CURRENT APPLICATION NUMBER: US/09/849,602
CURRENT FILING DATE: 2001-05-04
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PatentIn version 3.0
LENGTH: 180
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Best Local Similarity 100.0%; Pred. No. 0.00
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    Stockert, Elisabeth
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CORGANISM: Homo sapiens
US-10-207-655-71
                                                                                                                                                                                                                                                      ; ORGANISM: Homo sapiens US-09-849-602-30
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US-10-207-655-71
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    APPLICANT:
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WES-10-777-053-11

Sequence 11, Application US/1077053

Sequence 11, Application US/1077053

Publication No. US20040132088A1

GENERAL INFORMATION:

APPLICANT: Diamord, David C.

APPLICANT: Diamord, David C.

APPLICANT: Diamord, David C.

APPLICANT: Diamord, David C.

TITLE OF INVENTION: EXPERSION VECTORS ENCODING EPITOPES OF

TITLE OF INVENTION WARRER: 10/292,413

PRIOR FILING DATE: 2004-10-107

PRIOR FILING DATE: 2001-11-07

PRIOR FILING DATE: 2001-11-07

NUMBER OF SEQ ID NOS: 979

SEQ ID NO 11

LENGTH: 180
                                                                                   ## APPLICANT: Mack, David H.

## APPLICANT: Bos Biotechnology, Inc.

## ITILE OF INVENTION: Methods of Screening for Modulators of Bladder

## ITILE OF INVENTION: and Methods of Screening for Modulators of Bladder

## ITILE OF INVENTION: Cancer

## ITILE OF INVENTION: and Methods of Screening for Modulators of Bladder

## ITILE OF INVENTION: Cancer

## ITILE OF INVENTION NUMBER: US 60/302,814

## PRIOR FILING DATE: 2001-01-03

## PRIOR FILING DATE: 2001-01-03

## PRIOR FILING DATE: 2001-11-08

## PRIOR FILING DATE: 2001-11-08

## PRIOR FILING DATE: 2001-11-03

## PRIOR FILING DATE: 2001-04-12

## PRIOR PRIOR FILING DATE: 2001-04-12

## PRIOR FILING DATE: 2001-04-12

## PRIOR FILING DATE: 2001-04-12
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100.0%; Pred. No. 0.00058;
vative 0; Mismatches 0;
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100.0%; Pred. No. 0.00058;
tive 0; Mismatches 0;
Sequence 139, Application US/10188832
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                               Publication No. US20040076955A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 100.
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Best Local Similarity 100.
Matches 20; Conservative
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US-10-777-053-11
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       PRIOR APPLICATION NUMBER: US 09/663,733
PRIOR FILING DATE: 2000-09-15
PRIOR PLING DATE: 2000-09-15
PRIOR PLING DATE: 2000-09-15
PRIOR PLING DATE: 2001-11-13
PRIOR APPLICATION NUMBER: US 60/335,394
PRIOR APPLICATION NUMBER: US 60/332,464
PRIOR PLING DATE: 2001-11-15
PRIOR PLING DATE: 2001-11-21
PRIOR APPLICATION NUMBER: US 60/334,393
PRIOR APPLICATION NUMBER: US 60/340,376
PRIOR APPLICATION NUMBER: US 60/340,376
PRIOR APPLICATION NUMBER: US 60/340,376
PRIOR PLING DATE: 2001-12-14
PRIOR PLING DATE: 2002-01-06
PRIOR PLING DATE: 2002-01-06
PRIOR PLING DATE: 2002-01-10
PRIOR APPLICATION NUMBER: US 60/347,211
PRIOR APPLICATION NUMBER: US 60/355,250
PRIOR APPLICATION NUMBER: US 60/355,714
PRIOR APPLICATION NUMBER: US 60/355,714
PRIOR APPLICATION NUMBER: US 60/355,714
PRIOR APPLICATION NUMBER: US 60/356,714
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Sequence 832, Application US/10296734

Publication No. US20040054137A1

GENERAL INFORMATION:
APPLICANT: Thompson, Scott A
APPLICANT: Ramshaw, Ian A
ITLE OF INVENTION: Synthetic molecules and uses therefor
FILE REPERENCE: Savine
CURRENT APPLICATION NUMBER: US/10/296,734

CURRENT FILING DATE: 2003-08-04

PRIOR FILING DATE: 2000-05-26
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0.00058;
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100.0%; Score 107;
Best Local Similarity 100.0%; Pred. No. 0
Matches 20; Conservative 0; Mismatche
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SOFTWARE: Patentin version 3.2
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US-10-188-832-139
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LENGTH: 180
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Publication No. US20040234541A1
GENERAL INFORMATION:
APPLICANT: Locas, Sophie
APPLICANT: Deces, Charles
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: LAGE-1 TUMOR ASSOCIATED NUCLEIC ACIDS
FILE REPERENCE: L0461/7066
                                                                                                                                                                                                                100.0%; Score 107; DB 16;
100.0%; Pred. No. 0.00058;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 107; DB 16; 100.0%; Pred. No. 0.00058;
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          PRIOR APPLICATION NUMBER: 604409123
PRIOR FILING DATE: 2002-09-06
NUMBER OF SEQ ID NOS: 610
SECTWARE: EastSEQ for Windows Version 4.0
SEQ ID NO 74
LENGTH: 180
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CURRENT FILING DATE: 2004-06-25
PRIOR PLILING DATE: 1209-10-18
PRIOR PLILING DATE: 1999-10-18
PRIOR APPLICATION NUMBER: US 08/791,495
PRIOR APPLICATION NUMBER: PCT/US98/01445
                                                                                                                                                                                                                                                                                                                                                                                                                        US-10-837-217-11
; Sequence 11, Application US/10837217
; Publication No. US20040203051A1
; GENERAL INFORMATION:
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2003-09-04
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Best Local Similarity 100.
Matches 20; Conservative
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                                                                                                                                                           ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; ORGANISM: Homo Sapien
US-10-837-217-11
CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        20;
                                                                                                                                                                                US-10-657-022-74
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                                                                                                                                      TYPE: PRT
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Best Local &
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                                                                                                                   APPLICANT: Knuth, Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Hanson, Norman D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; Score 107; DB 16; Best Local Similarity 100.0%; Pred. No. 0.00058; Matches 20; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM
COMPUTER: IBM
COPERATING SYSTEM: PC-DOS
SOGTWARE: Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/751,088
FILING DATE: 02-Jan-2004
CLASSIFICATION: 530
PRIOR APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-OC-11998
APPLICATION NUMBER: US/09/165,546D
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1937
APPLICATION NUMBER: US/09/125,182
FILING DATE: COCLOBER: US/09/725,182
FILING DATE: COCLOBER: US/09/725,182
                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
STREET: 666 Fifth Avenue
CITY: New York City
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Sequence 74, Application US/10657022

Sequence 74, Application US/10657022

Publication No. US20040180354A1

GENERAL INFORMATION:
APPLICANT: Simard, John J. L.
APPLICANT: Liu, Liping
APPLICANT: Liu, Liping
APPLICANT: Liu, Zheng
TITLE REPERENCE: MANNK. 032A

FITLE REPERENCE: MANNK. 032A

CURRENT APPLICATION NUMBER: US/10/657,022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO: 15
                                                                                                                                                                                                     USES THEREOF
                                                        Sequence 15, Application US/10751088 Publication No. US20040158044A1 GENERAL INFORMATION:
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TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                         STATE: New York
                                                                                                                                                                                                                                                                                                                                              COUNTRY: USA
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US-10-723-860-1270

Sequence 1270, Application US/10723860

Sequence 1270, Application Wolf0723860

Sequence 1270, Application Wolf0723860

GENERAL INFORMATION:

APPLICANT: Alziz, Natasha

TITLE OF INVENTION: Methods of Diagnosis of Soft Tissue Sarcoma, Compositions & TITLE OF INVENTION: Methods for Screening for Soft Tissue Sarcoma Modulators FILE REFERENCE: 05882.0193.NPUSOI

CURRENT APPLICATION NUMBER: US/10/723,860

CURRENT FILING DATE: 2003-11-26

PRIOR FILING DATE: 2002-11-26

NUMBER OF SEQ ID NOS: 8393

SOFTWARE: PatentIn version 3.2

SEQ ID NO 1270

LENGTH: 180
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; Sequence 7, Application World 10811708
; GENERAL INFORMATION:
    APPLICANT: Chiang, Chih.Sheng
; TITLE OF INVENTION: COMBINATIONS OF TUMOR-ASSOCIATED
; TITLE OF INVENTION: COMBINATIONS OF TUMOR-ASSOCIATED
; TITLE OF INVENTION: ANTIGENS IN COMPOSITIONS FOR VARIOUS TYPES OF CURRENT APPLICATION NUMBER: US/10/871,708
; CURRENT APPLICATION NUMBER: 60/479,554
; PRIOR FILING DATE: 2003-06-17
; NUMBER OF SEQ ID NOS: 18
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 7
; LENGTH: 180
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Best Local Similarity 100.0%; Pred. No. 0.00058;
Matches 20; Conservative 0; Mismatches 0; Indels 0
                                                                                                                                                                                                Length 180;
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                                                                                                                                                                                         Query Match 100.0%; Score 107; DB 16; Best Local Similarity 100.0%; Pred. No. 0.00058; Matches 20; Conservative 0; Mismatches 0;
NUMBER OF SEQ ID NOS: 14
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 9
                                                                                                                                                                                                                                                                                                                  43 RGPRGAGAARASGPGGGAPR 62
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                                                                                             ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-877-373-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-723-860-1270
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Search completed: September 11, 2005, 02:07:10 Job time : 27.0476 secs

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This sequence represents cancer peptide ESO10-127 that corresponds to amino acid residues 127-136 of human ESO-1/CAG-3 (or CAG-3) ORF1 (see AAY05965), a new and potent tumour antigen capble of eliciting an antigen specific immune response by T cells. Cancer peptides derived from CAG-3 ORF1, CAG-3 ORF2 (see AAY05966), portions of them and their variants (see AAY05967-87), are useful as cancer vaccines that protect against cancer. The invention provides: vectors and host cells (also useful as vaccines); a method of diagnosis of cancer or precancer; a transgenic animal; antisense oligonucleotides that inhibit expression of the cancer peptide or tumour antigen; antibodies reacting with a CAG-3
Epitope 1
Epitope 1
Epitope 1
Cancer as
Human NY-
Human can
         Adk68657 Epitope 1
Adq10455 Epitope 1
Aaw62584 Cancer as
Aaw65965 Human NY-
Aay05965 Human can
Aay52430 Human can
Aay70862 Human tum
Aab03154 Human nem
Aab03154 Human nem
Aab03155 Human NY-
Aau01535 Human NY-
Aau01535 Human NY-
Aau01543 Human NY-
Aau11543 Human NY-
Aau11543 Human NY-
Aau11543 Human Lum
Abr58672 Human can
Abr8679 Human can
Abr8679 Human can
Abr58691 Lung canc
Abu56508 Human bla
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Human cancer antigen NY ESO-1/CAG-3 ORF1 cancer peptide ESO10-127.
                                                                                                                                                                                                                                                                                                                            ALIGNMENTS
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                                                       AAW69665
AAY05965
AAY52430
AAY70862
AAB03154
                                                                                                                                            AAG67164
AAU01535
AAE07714
AAU84818
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ABR58672
ABR48210
ABU56508
ABU56694
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                                           AAW62584
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Homo sapiens.
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 AAY05980;
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Aay05980 Human can
Aae07588 Human Can
Aae07788 Human NY
Aae07726 Human NY
Aae07727 Human NY
Aae07787 Human NY
Aae07787 Human NY
Aab5944 Human NY-
Aab57745 Human NY-
Aae07769 Human HAAAB51
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                                                                                               September 11, 2005, 01:19:58; Search time 14.3333 Seconds (without alignments) 269.833 Million cell updates/sec
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Aae07728 H
Aae07726 H
Aae07727 H
Aae07787 H
Aab69940 H

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Adg89697 C
Adg10452 E
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             GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
                                                                      OM protein - protein search, using sw model
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AAE07717
AAU85110
ABG79131
ADG89697
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AAY05988
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AAE07726
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AAU01540
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ADI19891
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AAE07718
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Gapop 10.0 , Gapext 0.5
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geneseqp2003as:*
geneseqp2003bs:*
geneseqp2004s:*
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Maximum DB seq length: 200000000
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          for preventing or inhibiting cancer by administering a cancer peptide, with or without an HiA molecule. The cancer peptides form part of, or are derived from, cancers such as primary or metastatic melanoma, thymoma, lymphoma, sarcoma, lung cancer, liver cancer, leukaemia, uterine cancer, cervical cancer, bladder cancer, kidney cancer and adenocarcinomas such as breast, prostate, ovarian, pancreatic and thyroid cancers. Melanoma is treated by inducing cancer-specific T cells in vitro for subsequent
cancer peptide, useful in diagnostic and detection assays; and methods
                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NY ESO-1/CAG-3 gene, CAG-3 gene; cancer peptide; antigen; human; leukaemia; non-Hodgkins lymphoma; Hodgkins lymphoma; lung cancer; metastasis; melanoma; adenocarchioma; thymoma; colon cancer; uterine cancer; breast cancer; prostate cancer; ovarian cancer; cervical cancer; bladder cancer; kidney cancer; pancreatic cancer; liver cancer; sarcoma; tumour; diagnosis; immunotherapy; therapy;
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                                                                                                                                                                                                                                      Length 10;
                                                                                                                                                                                                                 100.0%; Score 47; DB 2; Length 10
100.0%; Pred. No. 0.0035; Mismafiches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human cancer antigen NY ESO-1/CAG-3 HLA peptide motif.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            vaccine; human leukocyte antigen; HLA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY05988 standard; peptide; 10 AA.
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Les 10; Conservative
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                                                                                                                                                             return to a patient
                                                                                                                                                                                                   Sequence 10 AA;
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The invention relates to the identification and isolation of major
histocompatibility (MHC) class II restricted T cell epitope (MHC-II
epitope) derived from the cancer antigen, NY ESO-I. The MHC-II epitopes
from NY ESO-I are recognised by CD4+ T lymphocytes in an human leucocyte
antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DR
restricted. The products of the gene are promising candidates for HLA-DR
restricted. The products of the gene are promising candidates for
munocherapeutic strategies for the prevention, treatment and diagnosis
of patients with cancer. The cancer epitopes are useful as immunogen and
vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T
lymphocytes resulting in protection of the recipient from development of
cancer and protection from metastasis, or by inhibiting the growth of
cancer and protection from metastasis, or by inhibiting the growth of
cancer and protection of the recipient from development of
useful as diagnostic agent to detect the presence of cancer, to enhance
the generation of antibody and/or CD8+ T cell responses against any given
carget antigen and/or hapten and to induce tumour-specific humoral-
mediated immunity against cancer. The present sequence is human NY ESO-I
peptide used in the characterisation of the NY ESO-I epitope recognised
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                                                                                                                                                                                                                                                                                                                                                                                           Human NY ESO-1 peptide #22 to characterise epitope recognised by TE4-1.
                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; major histocompatibility complex; MHC; vaccine; metastasis; class II restricted T cell epitope; MHC-II epitope; cancer antigen; NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                  100.0%; Score 47; DB 2; Length 10; 100.0%; Pred. No. 0.0035; ive 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                      AAE07788 standard; peptide; 14 AA.
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29-SEP-2000; 2000US-0237107P.
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                                                                                                                         1 TVSGNILTIR
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                                                          Best Local Similarity
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Sequence 10 AA;
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                                         Query Match
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                                                                                Matches
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AAE07726 standard; peptide; 15 AA.

AAE07724 RESULT

AAE07726;

TVSGNILTIR 13

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The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitope) derived from the cancer antigen, NY ESO-I. The MHC-II epitopes from NY ESO-I are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HHA) class II restricted manner, in particular HLA-DR or HLA-DP restricted. The products of the gene are promising candidates for immunocherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in ammmal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of cancer and protection from metastasis, or by inhibiting the growth of cancer and protection from metastasis, or by inhibiting the growth of cancer and protection of an analysis of the generation of the cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the presence of cancer peptides are also the generation of analysis of the generation of analysis of the generation of analysis of the generation of any of the growth of the generation of analysis of the generation of any of the growth of the generation of any of the generation of any of the generation of the cancer peptides are also the growth of the generation of any of the generation of any of the growth of the generation of any of the generation of any of the growth of the growth of the growth of the generation of any of the growth of the
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mediated immunity against cancer. The present sequence is MHC class II
restricted T cell epitope of human NY BSO-1 protein
                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; major histocompatibility complex; MHC; vaccine; metastasis; class II restricted T cell epitope; MHC-II epitope; cancer antigen; WY SSO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human NY ESO-1 MHC class II restricted T cell epitope #14.
Pred. No. 0.0053;
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                                                                                                                                                                                                                                                                                              AAE07728 standard; peptide; 14 AA.
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                      100.08;
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                                                   10; Conservative
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                         Best Local Similarity
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histocompatibility (MHC) class II restricted T cell epicope (MHC-II epitope) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes from WR ESO-1 are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DR restricted. The products of the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of calls expressing the NY-ESO-1 gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral-mediated Immunity against cancer. The present sequence is MHC class II restricted T cell epitope of human NY ESO-1 protein
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                                                                                                               Human, major histocompatibility complex; MHC; vaccine; metastasis; class II restricted T cell epitope; MHC-II epitope; cancer antigen; NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                                Human NY ESO-1 MHC class II restricted T cell epitope #12.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zeng G;
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Les 10; Conservative
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                                                                                                                                                                                                   immunotherapy
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100.0%; Score 47; DB 4; Length 14; 100.0%; Pred. No. 0.0053; ive 0; Mismatches 0; Indels

Best Local Similarity 100. Matches 10, Conservative

Query Match

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Human NY ESO-1 peptide #20 to characterise epitope recognised by TE4-1.
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                                                                                                                                           WO200155393-A2.
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                             New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as protection from metastasis.
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                                                                                                     Human, major histocompatibility complex; WHC; vaccine; metastasis; class II restricted T call epitope; MHC-II epitope; cancer antigen; NY ESO-1 protein; CD4 + T lymphocyte; human leuccoyte antigen; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                             Human NY ESO-1 MHC class II restricted T cell epitope #13.
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AAE07727 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 4; Page 16; 134pp; English.
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29-SEP-2000; 2000US-0237107P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 15 AA;
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                                                                                                                                                             immunotherapy
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The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II celtoped) derived from the cancer antigen, NY ESO-1. The MHC-II epitopes I reptrated from the cancer antigen, NY ESO-1. The MHC-II epitopes I rom NY ESO-1 are recognised by CD4+ T Lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DR creaticted. The products of the gene are promising candidates for munorcherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of cancer and protection from metastasis, or by inhibiting the growth of cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tunour-specific humoral-cancer mediated immunity against cancer. The present sequence is human NY ESO-1 peptide used in the characterisation of the NY ESO-1 epitope recognised
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as
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Human; major histocompatibility complex; MHC; vaccine; metastasis; class II restricted T cell epitope; MHC-II epitope; cancer antigen; NY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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29-SEP-2000; 2000US-0237107P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-496851/54.
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Synthetic
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AAB69940
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                                                                                                                                                                                                                                                                                                                                                                     The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitopes epitope) derived from the cancer antigen, NV ESO-I. The MHC-II epitopes from NV ESO-I are recognised by CD4+ T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DP centracted. The products of the gene are promising candidates for memorpharapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in amammal Dy eliciting CD4+ T lymphocytes resulting in protection of the recipient from development of cancer and protection from metaetasis or by inhibiting the growth of cancer and protection from metaetasis, or by inhibiting the growth of cells as diagnostic agent to detect the presence of cancer, to enhance the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral mediated immunity against cancer. The present sequence is human NY ESO-I epitope recognised
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                                                                                                                                                                                                                                                                                           New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as
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 class II restricted T cell epitope; MHC-II epitope; cancer antigen;
             VY ESO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; HLA;
cumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 47; DB 4; Length 15; 100.0%; Pred. No. 0.0058; tive 0; Mismatches 0; Indels
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29-SEP-2000; 2000US-0237107P.
                                                                                                                                             26-JAN-2001; 2001WO-US002765
                                                                                                                                                                                                                                                                                                                     protection from metastasis.
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Matches 10, Conservative
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                                                                                          WO200155393-A2.
                                     immunotherapy.
                                                                 Homo sapiens
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tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major tumour antigen, NY-ESO-1 (AAY52430) which can bind to MHC(major histocompatibility Class II HIA-DR53 molecules, thereby stimulating proliferation of helper T-cells. CDNA encoding NY-ESO-1 was initially isolated from an oesophagus squamous cell cancer CDNA library. Tissue closalisation studies revealed it to be expressed at high levels in normal ovary and testis but not in normal colon, kidney, liver, brain, oesophagus and skin. It was expressed in certain tumours and tumour cell lines with some degree of frequency - these included melanoma specimens in other tumour types being sporadic. These NY-ESO-1-derived peptides may be used in methods and compositions used for the treatment, diagnosis and compositions used for the treatment, diagnosis and compositions used for the treatment, diagnosis and lung cancer, hepatoma, ovarian cancer, thyroid cancer, prostate cancer, clumphoma) and to stimulate the proliferation of T cells
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel peptides which bind to MHC class I and MHC class II molecules, useful for therapeutic and diagnostic purposes.
                                                                                                                                                                                                                                                                                                                                                                                                                      old LJ;
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                                                                                                                                                                                                                                                                                                                                                                                                                      Alexander K,
                                                                                                                                                                                                                                                                                                                                                                                                                      Scanlan M,
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                                                                                                                                                                                                                                                                                                                                                                                                                      Chen Y,
                                                                                                                                                                                                                                                                                                                                                      (LUDW-) LUDWIG INST CANCER RES
                                                                                                                                                                                                                                                       98US-00062422.
98US-00165546.
                                                                                                                                                                                          99WO-US006875.
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Gure A, Ritter G;
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Homo sapiens.
                                                             WO9953938-A1
                                                                                                                                                                                          24-MAR-1999;
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Sequence 18 AA;
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                                                                                                                                                                                                                        The present sequence is given in a specification relating to a method for determining the status of a cancerous condition in a patient with a tumour that expresses NY-ESO-1. The method comprises assaying a sample taken from the patient for antibodies that specifically bind to the NY-ESO-1 and comparing the value obtained to a prior value obtained from assay of a prior sample taken from the patient. Any difference between the values is indicative of a change in status of the cancerous condition. The method is useful for determining whether a cancerous condition is progressing, regressing or remaining stable, in particular in patients receiving treatment for a melanoma, adenocarcinoma, non-small lung carcinoma or bladder carcinoma
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                 Method useful for determining the status (e.g. progression, regression or stability of the disease) of a cancerous condition, involves determining the levels of NY-ESO-1 specific antibodies in a sample taken from a
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                                                                              Scanlan M;
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                                                                              Chen Y,
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                                                                              Knuth A,
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(SLOK ) SLOAN KETTERING INST CANCER RES.
(CORR ) CORNELL RES FOUND INC.
                      (LUDW-) LUDWIG INST CANCER RES.
(SLOK ) SLOAN KETTERING INST CANCER RES.
(CORR ) CORNELL RES FOUND INC.
                                                                                                                                                                                                       Example 16; Page 27; 50pp; English.
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99US-00359503.
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                                                                              Stockert E,
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                                                                                                        WPI; 2001-182822/18.
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23-JUL-1999;
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                                                                               Jager E,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; WHC Class II; major histocompatibility complex; helper T cell; HLA-DR; cancer; muman leukocyte antigen-determining region; disease progression; disease regression; disease onset; body tissue; body fluid; enzyme label; radioactive label; monoclonal antibody.
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stability of the disease) of a cancerous condition, involves determining the levels of NY-ESO-1 specific antibodies in a sample taken from a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The sequence represents a human NY-ESO-1 tumour rejection antigen precursor fragment which recognises and binds to HIA-DR53. NY-ESO-1 and SSX-2 polypepitdes, or fragments of, bind to major histocompatibility complex (MHC) class II molecules such as human leukcoyte antigendetermining region (HIA-DR) molecules and stimulate proliferation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 47; DB 4; Length 18; 100.0%; Pred. No. 0.0073; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfreundschuh M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 13; Page 19; 62pp; English.
                                                                                              Example 16; Page 28; 50pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAU01544 standard; peptide; 18 AA.
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Best Local Similarity
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helper T cells. The peptides can be administered to an HLA-DR positive subject in order to stimulate the helper T cells. An MHC class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in free form is useful for this stimulation. The nucleic acid is useful for sometimes of a cell or present in stimulation, which involves contacting a subject screening for a cancerous condition, which involves contacting a subject approach in transfected with the immunoreactive cell (helper T cell), where interaction is indicative of cancer. In addition, a sample from a patient (for example, a body fluid or tissue) can be monitored for the amount of the complex present in the bloodstream. This is useful for determining regression, progression or onset of a cancerous condition. The method involves contacting the sample with a radioactive labelled or enzyme labelled monoclonal antibody which specifically binds with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NY-ESO-1; human; tumour rejection antigen precursor; SSX-2; MHC Class II; major histocompatibility complex, helper T cell; HLA-DR; cancer; human leukocyte antigen-determining region; disease progression; disease onset; body tissue; body fluid; enzyme label; radioactive label; monoclonal antibody.
                                                                                                                                                                                                                                                                                                                     Gaps
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                                                                                                                                                                                                                                                                              100.0%; Score 47; DB 4; Length 18; 100.0%; Pred. No. 0.0073; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HLA-DR53 recognising NY-ESO-1 peptide #2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26-SEP-2000; 2000WO-US026411.
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Matches 10; Conserv
                                                                                                                                                                                                                                                Sequence 18 AA;
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screening for a cancerous condition, which involves contacting a subject sample to a cell line transfected with the immunoreactive cell (helper T cell), where interaction is indicative of cancer. In addition, a sample from a patient (for example, a body fluid or tissue) can be monitored for the amount of the complex present in the bloodstream. This is useful for determining regression, progression or onset of a cancerous condition. The method involves contacting the sample with a radioactive labelled or enzyme labelled monoclonal antibody which specifically binds with the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to the identification and isolation of major histocompatibility (MHC) class II restricted T cell epitope (MHC-II epitopes derived from the cancer antigen, NY ESO-I. The MHC-II epitopes from NY ESO-I are recognised by CD4+T lymphocytes in an human leucocyte antigen (HLA) class II restricted manner, in particular HLA-DR or HLA-DR immunotherapeutic strategies for the gene are promising candidates for immunotherapeutic strategies for the prevention, treatment and diagnosis of patients with cancer. The cancer epitopes are useful as immunogen and vaccine to inhibit or to prevent cancer in a mammal by eliciting CD4+T lymphocytes resulting in protection of the recipient from development of cancer and protection from metastasis, or by inhibiting the growth of cells expressing the NY-ESO-I gene product. The cancer peptides are also useful as diagnostic agent to detect the presence of cancer, to enhance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as protection from metastasis.
                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; major histocompatibility complex; MHC; vaccine; metastasis; class II restricted T cell epitope; MHC.II epitope; cancer antigen; WH SSO-1 protein; CD4+ T lymphocyte; human leucocyte antigen; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                                                                                                                                                                                               100.0%; Score 47; DB 4; Length 18; 100.0%; Pred. No. 0.0073; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human NY ESO-1 HLA DR restricted T cell cancer peptide #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAE07769 standard; peptide; 18 AA.
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29-SEP-2000; 2000US-0237107P.
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                                                                                                                                                                                                                                                                      Similarity
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The sequence represents a human NY-ESO-1 tumour rejection antigen precursor fragment which recognises and binds to HLA-DR53. NY-ESO-1 and SSX-2 polypeptides, or fragments of, bind to major histocompatibility complex (WHC) Class II molecules such as human leukocyte antigendetermining region (HLA-DR) molecules and stimulate proliferation of helper T cells. The peptides can be administered to an HLA-DR positive subject in order to stimulate the helper T cells. An WHC Class II HLA-DR-NY-ESO-1/SSX-2 complex expressed on the surface of a cell or present in free form is useful for this stimulation. The nucleic acid is useful for

Polypeptides binding to major histocompatibility complex class II human leukocyte antigen-determining region molecule having amino acid sequence found in tumor rejection antigen precursor used for stimulating

Example 13; Page 19; 62pp; English.

proliferation of helper T cells.

WPI; 2001-266156/27.

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the generation of antibody and/or CD8+ T cell responses against any given target antigen and/or hapten and to induce tumour-specific humoral-mediated immunity against cancer. The present sequence is human NY ESO-1 HLA DR restricted T cell cancer peptide
                                                                                                                                                                                                                                                                  Human ESO p126-145 peptide, to identify MHC class II-restricted epitopes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New NY-ESO cancer peptide or MHC class II restricted T cell epitopes, useful as immunogen and vaccine for inhibiting cancer in a mammal or as protection from metastasis.
                                                                                                    Gaps
                                                                                                                                                                                                                                                                                     Human, major histocompatibility complex; MHC; vaccine, metastasis; class II restricted T call epitope; MHC:II epitope; cancer antigen; NY ESO-1 protein; CD4 + T lymphocyte; human leucocyte antigen; HLA; tumour-specific humoral-mediated immunity; cancer; cytostatic;
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                                                                             100.0%; Score 47; DB 4; Length 18; 100.0%; Pred. No. 0.0073; ive 0; Mismatches 0; Indels
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                                                                                                                                                                                                 AAE07742 standard; peptide; 20 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Zeng G;
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29-SEP-2000; 2000US-0237107P.
                                                                                                                                                                                                                                            06-NOV-2001 (first entry)
                                                                                         Local Similarity 100.
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                                                                                                                         1 TVSGNILTIR 10
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                                                          Sequence 18 AA;
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Sun Sep 11 09:15:41 2005

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September 11, 2005, 01:28:54; Search time 2.80952 Seconds (without alignments) 342.466 Million cell updates/sec
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
                                                                                                              OM protein - protein search, using sw model
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US-09-529-206E-4_COPY_127_136 1 TVSGNILTIR 10 Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 seqs, 96216763 residues Searched:

283416 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_79:*
1: pir1:*
2: pir2:*
3: pir2:*
4: pir4:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES & Query Result

Description	ail	c Acid	acid	tica	u	translation initia	2-hydroxyacid dehy	hypothetical prote		hetical	н			hypothetical prote		N-acetylglutamate	probable amino-aci	serotonin receptor	serotonin receptor	serotonin receptor	5-hydroxytryptamin	serotonin receptor	hypothetical prote			hypothetical prote	probable integral	conserved hypothet	5-HT2c receptor -
ID	T13099	AD2753	B97534	A89837	RSBSOF	T41234	AB3218	G86835	A85989	F91143	TPBPP1	S18683	G95241	B98106	F85253	B81033	A81977	802011	A43956	S11280	S40689	A34863	E96674	T02759	F71405	C86898	B81972	D81029	137105
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Match	76.6		9.9/	74.5	72.3	72.3	72.3	72.3	72.3	72.3	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2		70.2	70.2	70.2	70.2	•	68.1	68.1	68.1
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hypothetical prote	hypothetical prote	probable oxidoredu	Iysozyme (EC 3.2.1	hypothetical prote	conserved domain p	conserved hypothet	uncharacterized pr	S-adenosylhomocyst	hypothetical prote	Bigma 1 protein pr	serotonin receptor	serotonin receptor	serotonin receptor	serotonin receptor	alkylhalidase homo
H75390	857550	C87158	S25234	A69325	G95146	E98014	C97059	E70401	865162	HMXRS3	JS0616	A43951	A32605	S23562	T30590
~	7	0	7	7	7	~	7	0	~	٦	7	0	~	~	7
234	245	289	316	344	347	347	376	418	451	455	458	459	460	479	491
68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1
	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
35															

### ALIGNMENTS

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C;Species: phage N15
C;Accession: T13099
R;Hendrix, R.W.; Bavin, V.K.; Casjens, S.R.; Ford, M.E.; Ravin, N.V.; Smirnov, I.K.
Submitted to the EMBL Data Library, May 1998
R;Hendrix, R.W.; Ravin, V.K.; Casjens, S.R.; Ford, M.E.; Ravin, N.V.; Smirnov, I.K.
Submitted to the EMBL Data Library, May 1998
R;Hendrix, R.W.; Ravin, V.K.; Casjens, S.R.; Ford, M.E.; Ravin, N.V.; Smirnov, I.K.
Submitted to the EMBL Data Library, May 1998
R;Refatus: preliminary; translated from GB/EMBL/DDBJ
A;Residues: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-245 cHEN>
A;Residues: 1-245 cHEN>
A;Cross-references: UNIFROT:064327; EMBL:AF064539; NID:g3192683; PID:g3192697; PIDN:AAC*C;Genetics:
C;Genetics:
A;Note: gene 13
A;Note: gene 13
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Pred. No. 14;
1; Mismatches
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77.8%;
                       major tail protein V - phage N15 N;Alternate names: protein gp13
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Best Local Similarity 77.0-
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T13099
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RESULT 2 AD2753

lipoic Acid Synthetase [imported] - Agrobacterium tumefaciens (strain C58, Dupont)				R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Wood, G.E.; Chen, Y.; W	Μ Μ		
C58, I		1 - 2004		.; Cher	7.; Li,		
strain		.u℃-60		d, G.E	Levy, I		
ciens (		C;Date: 11-Jan-2002 #sequence revision 11-Jan-2002 #text change 09-Jul-2004	1	L.; WOO	n, T.;		
tumefa		#text	-	Chen,	Kutyavi		
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Agrobac		n 11-J		Monk	enthner		
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d Syntl	Agroba	-Jan-2(	C; Accession: AD2753	W.; Set	Gillet	; Rome	4, 2317
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lipo	C; Sr	C;Da	C; AC	R; WC	erag	 8	Scie

A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm, ster, E.W.
A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens C58.
A;Reference number: AB2577; MUID:21608550; PMID:11743193
A;Accession: AD2753

A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Cross-references: UNIPROT:Q8UFG1; GB:AE008688; PIDN:AAL42442.1; PID:g17739856; GSPDB:(
A;Experimental source: strain C58 (Dupont)
A;Experimental source: strain C58 (Dupont)
A;Gene: lipA
A;Map position: circular chromosome
C;Superfamily: lipoic acid synthase

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TVAGNVLT 148
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43 TVEGNVITV 51
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                                                                                                                                                                                                                                                                                                                                                                           lipoic acid synthetase (lip-syn) (lipoate synthase) [imported] - Agrobacterium tumefacie (Species: Agrobacterium tumefaciens C;Species: Agrobacterium tumefaciens C;Species: Agrobacterium tumefaciens C;Species: Agrobacterium tumefaciens C;Species: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 09-Jul-2004 C;Accession: B97534 R;Goodner, B.; Hinkle, G.; Gattung, S.; Miller, N.; Blanchard, M.; Qurollo, B.; Goldman, A.; Luu, F.; Wollam, C.; Allinger, M.; Doughty, D.; Scott, C.; Lappas, C.; Markelz, B.; Science 294, 2323-2328, 2001 A;Title: Genome Sequence of the Plant Pathogen and Biotechnology Agent Agrobacterium tum A;Reference number: A97359; MUD:21608551; PMID:11743194 A;Status: preliminary A;Accession: B97534 A;Status: preliminary A;Residues: 1-323 acuts. A;Residues: 1-323 acuts. A;Residues: 1-323 acuts. A;Corsa-references: UNIPROT:Q8UFG1; GB:AE007869; PIDN:AAK87227.1; PID:g15156511; GSPDB:GCGGenetics: A;Genetics: A;Gen
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C,Species: Staphylococcus aureus
C,Species: On May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
C,Accession: A89837
R;Kuroda, M.; Ohta, T.; Uchiyama, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cui, L.; Oguc
R;Kuroda, M.; Ohta, T.; Uchiyama, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cui, L.; Oguc
C, Shiba, T.; Hattori, M.; Ogasawara, N.; Hayashi, H.; Hiramatsu, K.
Lancet 357, 1225-1240, 2001
A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus.
A;Reference number: A89758; MUID:21311952; PMID:11418146
A;Accession: A89837
A;Status: preliminary
A;Nolecule type: DNA
A;Dosciette type: DNA
A;Dosciette type: DNA
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A;Cross-references: UNIPROT:Q99VV7; GB:BA000018; PID:g13700555; PIDN:BAB41852.1; GSPDB:G
A;Experimental source: strain N315
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C;Superfamily: probable sodium-dependent phosphate transporter MTH1885
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       Length 323;
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70.0%; Pred. No. 30;
tive 1; Mismatches
       DB
18;
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       Score 36;
Pred. No.
       76.6%;
70.0%;
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Best Local Similarity 70...
7; Conservative
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Best Local Similarity 70.0
Matches 7; Conservative
Query Match
Best Local Similarity 70.0
Matches 7; Conservative
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RESULT 5 RSBSOF

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ribosomal protein L6 - Bacillus stearothermophilus
N;Alternate names: ribosomal protein Bilo
C;Species: Bacillus stearothermophilus
C;Species: Bacillus stearothermophilus
C;Accession: A02766, B39085, S59061
R;Kimura, M.; Rawlings, N.; Appelt, K.
FBBS Lett. 136, S8-64, 1981
A;Title: The amino acid sequence of protein Bilo from the 50S subunit of the Bacillus st
A;Reference number: A02766
A;Recession: A02766
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A; Residues: 1-177 < KIM
A; Residues: 266, 880-885, 1991
A; Reference number: A39085; MUID:91093287; PMID:198569
A; Recession: B39085
A; Residues: B-170 < RAM
A; Rigitues: B-170 < RAM
A; Rigitues
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A;Cross-references: UNIPROT:094476; EMBL:AL035075; PIDN:CAA22640.1; GSPDB:GN00068; SPDB
A;Experimental source: strain 972h-; cosmid c1919
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A,Map position: 3
A;Introns: 12/2; 36/2
C,Superfamily: conserved hypothetical protein YPR016c
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
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Pred. No. 35;
2; Mismatches
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A,Molecule type: protein
A,Residues: 149-163 «URL»
C,Superfamily: ribosomal protein L6/L9
C,Keywords: protein biosynthesis; ribosome
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75.0%;
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Best Local Similarity 75.0°
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Sun Sep 11 09:15:41 2005

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C;Species: Lactococcus lactis subsp. lactis
C;Species: Lactococcus lactis lactic lactic lactic lactic lactic lactic lactic lactis lacti
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A;Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7.
A;Reference number: A885480; MUD:21074935; PMID:11206551
A;Accession: A85899
A;Status: preliminary
A;Molecule type: DNA
                                                                                                                              R; Wood, D.W.; Setubal, J.C.; Kaul, R.; Monke, D.; Chen, L.; Wood, G.E.; Chen, Y.; Woo, I erage, G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; Levy, R.; Li, M.; McClell Science 294, 2317-2323, 2001
A; Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; Perry, M.; Gordon-Kamm,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-311 <KUR>
A;Cross-references: UNIPROT: Q8UJK3; GB: AE008687; PIDN: AAL46160.1; PID: g17743930; GSPDB: G;Genetics: strain C58 (Dupont)
A;Gene: Atu5474
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A;Experimental source: strain IL1403
C;Genetics:
A;Gene: yreB
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C;Species: Escherichia coli
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 09-Jul-2004
C;Accession: A85989
                                                                                                                                                                                                                                                                                                                                                                     ster, E.W.
A;Title: The Genome of the Natural Genetic Engineer Agrobacterium tumefaciens CS8.
A;Reference number: AB2577; WUID:21608550; PMID:11743193
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C;Species: Agrobacterium tumefaciens
C;Date: 11-Jan_2002 #sequence_revision 11-Jan-2002 #text_change 09-Jul-2004
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Pred. No. 44;
1; Mismatches
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C;Superfamily: phosphoglycerate dehydrogenase
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Best Local Similarity 77.8%;
Matches 7; Conservative
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Best Local Similarity 75.0
Matches 6; Conservative
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288 VAGNILTYR 296
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93 ISGNILTL 100
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A;Residues: 1-1266 <STO>
A;Cross-references: UNIPROT:Q8X9D5; GB:AE005174; NID:g12517869; PIDN:AAG58373.1; GSPDB:cA;Experimental source: strain O157:H7, substrain EDL933
C;Genetics:
A;Gene: Z4604
C;Superfamily: Bscherichia coli hypothetical protein yhdP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypothetical protein ECs4118 [imported] - Escherichia coli (strain O157:H7, substrain R C;Species: Escherichia coli (5.5pecies: Escherichia (5.5pecies: Escherichia (5.5pecies: Escherichia (5.5pecies: Escherichia (5.5pecies: Escherichia (5.5pecies: Escherichia coli (5.5pecies: 
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A;Molecule type: DNA
A;Residues: 1-1266 <HAY>
A;Cross-references: UNIPROT: Q8X9D5; GB:BA000007; PIDN:BAB37541.1; PID:g13363591; GSPDB:c
A;Experimental source: strain O157:H7, substrain RIMD 0509952
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A;Residues: 1-144 <GUI>
A;Cross-references: UNIPROT:P22946; GB:M25470; NID:g341349; PIDN:AAA58777.1; PID:g538421
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C;Species: phage P1
C;Species: phage P1
C;Species: phage P1
C;Species: phage P1
C;Dacession: 30-Sep-1992 #sequence_revision 30-Sep-1992 #text_change 09-Jul-2004
C;Accession: 4.7 Zingg, J.M.; Arber, W.
R;Guidolin, A.; Zingg, J.M.; Arber, W.
A;Title: Organization of the bacteriophage P1 tail-fibre operon.
A;Reference number: PS0109; MUID:89326122; PMID:2526777
A;Accession: JS0460
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C;Superfamily: Escherichia coli hypothetical protein yhdP
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C,Superfamily: phage Pl tail fiber protein R
C,Keywords: tail fiber
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Best Local Similarity 66.7
Matches 6; Conservative
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1017 TISGNTLTL 1025
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1017 TISGNTLTL 1025
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79 TYSGGIITVR 88
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45 SVAGNIITI
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Matches 6; Conserv
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R;Tettelin, H.; Nelson, K.E.; Paulsen, I.T.; Eisen, J.A.; Read, T.D.; Peterson, S.; Heid on, J.D.; Umayam, L.A.; White, O.; Salzberg, S.L.; Lewis, M.R.; Radune, D.; Holtzapple, nson, T.; Hickey, E.K.; Holt, I.E.
Science 293, 498-506, 2001
A;Authors: Loftus, B.J.; Yang, F.; Smith, H.O.; Venter, J.C.; Dougherty, B.A.; Morrison, A;Title: Complete Genome Sequence of a virulent isolate of Streptococcus pneumoniae.

A;Reference number: A95000; MUID:21357209; PMID:11463916
                                                                                                                                                                                                                                                                                                                                       A;Cross-references: UNIPROT:Q47426; EMBL:X62121; NID:g42224; PIDN:CAA44046.1; PID:g42228
C;Genetics:
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A;Residues: 1-411 <KUR>
A;Cross-references: UNIPROT:097NGS; GB:AE005672; PIDN:AAK76128.1; PID:g14973575; GSPDB:A;Experimental source: strain TIGR4
C;Genetics:
A;Gene: SP2065
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                     C;Species: Escherichia coli
C;Date: 03-May-1994 #sequence_revision 20-Feb-1995 #text_change 09-Jul-2004
C;Date: 03-May-1994 #sequence_revision 20-Feb-1995 #text_change 09-Jul-2004
C;Accession: S18683
R;Sandmeier, H; Iida, S.; Huebner, P.; Hiestand-Nauer, R.; Arber, W.
Nucleic Acids Res. 19, 5831-5838, 1991
A;Reference number: S18680; MUID:92051368; PMID:1945872
A;Reference number: S18683
A;Reference number: S18683
A;Reference pubper: DNA
A;Residues: 1-144 <SAN>
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C;Date: 03-Aug_2001 #sequence_revision 03-Aug-2001 #text_change 09-Jul-2004
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gene R protein - Escherichia coli plasmid p15B
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C;Superfamily: phage P1 tail fiber protein R
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Best Local Similarity 60.0
Matches 6; Conservative
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TYSGGIITVR 88
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Best Local Similarity
Matches 6; Conserv
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A, Status: preliminary
A, Molecule type: DNA
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A,Residues: 1-426 «KUR»
A,Cross-references: UNIPROT:Q8DN77; GB:AE007317; PIDN:AAL00679.1; PID:g15459568; GSPDB:C
C,Genetics:
A,Gene: MATE transporter
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C; Genetics:
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Pred. No. 99;
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98;
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A;Reference number: A97872; MUID:21429245; PMID:11544234
A;Accession: B98106
A;Status: preliminary
A;Molecule type: DNA
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A;Map position: 4
C;Superfamily: Arabidopsis thaliana hypothetical
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Pred. No.
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Best Local Similarity 60.0
Matches 6; Conservative
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EMBL, U87459; AAB49693.1; -.
EMBL, AA003149; CAA05908.1; -.
EMBL, AF038567; AAD05202.1; -.
Genew; HGNC:2491; CTAGIB.
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(Rel. 37, I
(Rel. 45, I
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15-DEC-1998 (
25-OCT-2004 (
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P78358;
RESULT 1
CTG1_HUMAN
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                                                                                    September 11, 2005, 01:20:48; Search time 13.2381 Seconds (without alignments) 386.822 Million cell updates/sec
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           GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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LIPA RHIET
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IBA2 HUMAN
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Q6GBG6
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Q6LJS0
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Gapop 10.0 , Gapext 0.5
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2: uniprot_trembl:*
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Maximum DB seq length: 200000000
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Perfect score:
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Q8IRNN3
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Q8LJR7
Q9LJR7
C097675
RAG_BACST
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RAG_BACST
RAG_BACST
Q8VGGG
Q8VGGG
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Q8VGGG
Q8VJK3
QRUJK3

44179
442233
46844
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1131
1177
244
3114
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### ALIGNMENTS

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TOTAL HOWAN

TO CTCS. HOWAN

TO PT0359.

TO 15-DEC-1998 (Rel. 37, Last sequence update)

TO 2000 (Rel. 45, Last amnotation update)

TO 2000 (Rel. 45, Last sequence)

TO 2000 (Rel. 45, Last sequence)

TO 2000 (Rel. 47, Last sequenc
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Gaps

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RESULT 2

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Tate R., Riccio A., Iaccarino M., Patriarca E.J.;

"Cloning and transcriptional analysis of the lipA (lipoic acid synthetase) gene from Rhizobium ethi.";

"FEMS Microbiol. Lett. 149:165-170(1997).

"I -!- FUNCTION: Catalyzes the radical-mediated insertion of two sulfur atoms into an acyl carrier protein (ACP) bound to an octanoyl group to produce a lipoyl group (By similarity).

"I -- CATALYTIC ACTIVITY: octanoyl-lacyl-carrier protein] + 2 sulfurs = lipoyl-[acyl-carrier protein].

"I -- COPACTOR: Binds 1 4Fe-4S cluster per subunit, and S-adenosyl-L-methionine (AdoMet) used for 5'-deoxyadenosyl radical generation (By similarity).

"I -- PATHWAY: Liposate biosynthesis; sulfur-insertion step.

"I -- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).

"I -- SUBCELLULAR LOCATION: Cytoplasmic (By similarity).

"I -- SIMILARATY: Belongs to the biotin and lipoic acid synthetases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-2004 (Rel. 44, Last annotation update)
Lipoyl synthase (BC 2.8.1.-) (Lipoyl synthase) (Lipoyl synthase (BC 2.8.1.-) (Lipoyl synthase)
(Lipoyl-acyl-carrier protein synthase) (Sulfur insertion protein lipA)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=97286510; PubMed=9141657; DOI=10.1016/S0378-1097(97)00069-4;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Rhizobium/Agrobacterium group; Rhizobium.
NCBI_TaxID=29449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 38; DB 1; Length 322;
Pred. No. 36;
2; Mismatches 1; Indels
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HAMAP; MF_00206; -; 1.
InterPro; IPR006538; Lipoate_synth.
InterPro; IPR007197; Radical_SAM.
InterPro; IPR007197; Radical_SAM.
Fam; PF04055; Radical_SAM; 1.
SNBART; SM00729; Elp3; 1.
TIGRFAMs; TIGRCO0510; Intak; 1.
HETAL 91 Iron-sulfur; Metal-binding; Transferase.
METAL 91 Iron-sulfur; Potential).
METAL 94 Iron-sulfur (Potential).
SEQUENCE 322 AA; 36297 MW; 4557185215486847 CRC64;
                                                                                 83.0%; Score 39; DB 2; Length 142; 88.9%; Pred. No. 10;
1
142 AA; 13895 MW; 27EBE922AC4ACC7B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                       322 AA.
                                                                                                                                                1; Mismatches
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Best Local Similarity 70.0.
                                                                                                                                                8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
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Rhizobium etli.
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NON TER
SEQUENCE
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                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ueda K., Yamashita A., Ishikawa J., Shimada M., Watsuji T.,
Morimura K., Ikeda H., Hattori M., Beppu T.;
"Complete genome sequence of an uncultured bacterium Symbiobacterium
thermophilum.";
Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
EMBL, AP006840; BAD39311.1;
GO; GO:0006457; P:protein folding; IEA.
GO; GO:0006986; P:response to unfolded protein; IEA.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
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                                                                                                                                                            100.0%; Score 47; DB 1; Length 180;
ilarity 100.0%; Pred. No. 0.3;
Conservative 0; Mismatches חיותים
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Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ275978; CAB76945.1; -.
Hypothetical protein.
                                                                                       Potential.
B122C5C2C8BE1569 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    141 AA; 15725 MW; C7BA8A8CFC50FD36 CRC64;
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01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-0CT-2002 (TrEMBLrel. 22, Last annotation update)
Hypothetical protein LAGE-2 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
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                                                           Gly-rich
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25-0CT-2004 (TrEMBLrel. 28, Last
25-0CT-2004 (TrEMBLrel. 28, Last
HSp20 family heat shock protein.
ORFNames=STH946;
Symblobacterium thermophilum.
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Interpro; IPR008978; Hsp20_chap.
Pfan; PF00011; HSP20; 1.
PROSITE; PS01031; HSP20; 1.
                                                                                                                   17992 MW;
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                                  Antigen; Transmembrane
                                                                                                                                                                                                                                                                                                   1 TVSGNILTIR 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
                                                              5
156 1
180 AA;
                                                                                                                                                                            Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=2734;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=IAM14863;
MIM; 300156; -
                                                                                       TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
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RESULT 3

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209 TVSGNTLTV 217

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323 AA
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                                                                              Created)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AE015817; AAN56819.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last seq
05-JUL-2004 (Rel. 44, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             76.6%;
87.5%;
                                                                                                                        Hypothetical protein SO3842.
OrderedLocusNames=SO3842;
                                                                           01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23, 01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 76.6
Best Local Similarity 87.5
Matches 7; Conservative
                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                       Shewanella oneidensis.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          153 TVSGNIIT 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 TVSGNILT 8
                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=176299;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                     NCBI_TaxID=70863;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TIGR; SO3842; -.
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ID _LIPA_AGRTS
                                              08EAQ4
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                 RESULT 7
                                Q8EAQ4
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                                                                                                                                                                                                                                                                                                                                        Pridmore R.D., Arigoni F.;
"The genome sequence of Bifidobacterium longum reflects its adaptation to the human gastrointestinal tract.";
Proc. Natl. Acad. Sci. U.S.A. 99:14422-14427(2002).
EMBL; AE014661; AAN24266.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteriophage N15.
Viruses; daDNA viruses, no RNA stage; Caudovirales; Siphoviridae;
Lambda-like viruses.
VCBI_TaxID=40631;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
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Hendrix R.W., Ravin V.K., Casjens S.R., Ford M.E., Ravin N.V.,

Hendrix R.W., Ravin V.K., Casjens S.R., Ford M.E., Ravin N.V.,

Submitted (May-1998) to the EMBL/GenBank/DDBJ databases.

EMBL, AF064539, AAC19050.1; -.

PIR; T13099; T13099.

Interpro; IPR008964; Invasin_intimin.

Fam; PF02368; Big_2; 1.

SMART; SM00635; BiD_2; 1.

SEQUENCE 245 AA; 25571 MW; 2CC941997C103FD3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                 Bifidobacterium longum.
Bacteria; Actinobacteria; Actinobacteridae; Bifidobacteriales;
Bifidobacteriaceae; Bifidobacterium.
                                                                                                                                                                                                                                                                           STRAIN=NCC 2705;
MEDLINE=22294977; PubMed=12381787; DOI=10.1073/pnas.212527599;
Schell M.A., Karmirantzou M., Snel B., Vilanova D., Berger B.,
Pessi G., Zwahlen M.-C., Desiere F., Bork P., Delley M.,
Pridmore R.D., Arigoni F.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 78.7%; Score 37; DB 2; Length 250; Best Local Similarity 87.5%; Pred. No. 45; Matches 7; Conservative 1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              76.6%; Score 36; DB 2; Length 245; 77.8%; Pred. No. 71; tive 1; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                   250 AA; 27653 MW; 7577954A609689CF CRC64;
                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                              250 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        245 AA.
                                                                                                         Created)
                                                                                                        01-MAR-2003 (TrEMBLrel. 23, Created)
01-MAR-2003 (TrEMBLrel. 23, Last seq
01-MAR-2003 (TrEMBLrel. 23, Last ann
Possible cobyric acid synthase CobO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                           PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 77.00.
                                                                                                                                                                     OrderedLocusNames=BL0429;
                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
188 TVAGNYLTVR 197
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SGNVLTIR 28
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                                                                                                                                                                                                                                 NCBI_TaxID=216816;
                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                      Complete proteome.
SEQUENCE 250 AA;
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RESULT 6 064327

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28-FEB-2003 (Rel. 41, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
Lipoyl synthase (EC 2.8.1.-) (Lipoic acid synthase)
(Lipoyl-acyl-carrier protein synthase) (Sulfur insertion protein lipA)
(Lip-syn).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gordon D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nelson W.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Heidelberg J.F., Pauleen I.T., Nelson K.E., Gaidos E.J., Nelson W.C. Read T.D., Eisen J.A., Seshadri R., Ward N.L., Methe B.A., Clayton R.A., Meyer T., Tsapin A., Scott J., Beanan M.J., Bernan M.J., Barinke. C.M., Daugherty, S.C., DeBoy R.T., Dodson R.J., Durkin A.S., Haft D.H., Kolonay J.F., Madupu R., Peterson J.D., Umayam L.A., White O., Wolf A.M., Vamathevan J.J., Weidman J.F., Impraim M., Lee K., Berry K.J., Lee C., Mueller J., Khouri H.M., Gill J., Utterback T.R., McDonald L.A., Feldblyum T.V., Smith H.O., Venter J.C., Nealson K.H., Fraser C.M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=21608550; PubMed=11743193; DOI=10.1126/science.1066804; Wood D.W., Setubal J.C., Kaul R., Monks D.E., Kitajima J.P., Okura V.K., Zhou Y., Chen L., Wood G.E., Almeida N.F. Jr., Woo L., Chen Y., Paulsen I.T., Eisen J.A., Karp P.D., Bovee D. Sr., Chapman P., Clendenning J., Deatherage G., Gillet W., Grant C., Kutyavin T., Levy R., Li M.-J., McClelland E., Palmieri A., Raymond C., Raymond C., Raymond C., Romero P., Gordon D. Shang S., Yoo H., Tao Y., Biddle P., Uung M., Kreeppan W., Perry M., Gordon-Kamm B., Liao L., Kim S., Hendrick C., Zhao Z.-Y., Dolan M.,
                                                                                                                                                             Shewanella oneidensis.
Bacteria; Proteobacteria; Gammaproteobacteria; Alteromonadales;
Shewanellaceae; Shewanella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
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grobacterium tumefaciens (strain CSS / ATC 33970).
Bacteria, Proteobacteria; Alphaproteobacteria; Rhizobiales;
Rhizobiaceae; Rhizobium/Agrobacterium group; Agrobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 36; DB 2; Length 318;
Pred. No. 92;
1; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=MR-1;
MEDLINE=22227686; PubMed=12368813; DOI=10.1038/nbt749;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete proteome.
SEQUENCE 318 AA; 34113 MW; 0A0B7165033B6FCF CRC64;
Last sequence update)
Last annotation update)
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A BUTCHIOL TOUGH TO THE TOTAL TOUGH TOUG
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MEDLINE=21996410; PubMed=12000953; DOI=10.1038/417141a;
MEDLINE=21996410; PubMed=12000953; DOI=10.1038/417141a;
Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,
Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,
Harper D., Bateman A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
Rabbinowitsch E., Rajandream M.A., Rutherford K.M., Rutter S.,
Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Warren T., Wietzorrek A., Woodward J.R., Barrell B.G., Parkhill J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Complete genome sequence of the model actinomycete Streptomyces coelicolor A3(2).";
Nature 417:141-147(2002).
-i- SIMILARITY: Belongs to cellulase family F (family 10 of glycosyl
                                                                                                                                                                                                        TISSUE=Olfactory;
MEDLINE=99043746; PubMed=9828044;
DOI=10.1002/(SICI)1097-4695(19981115)37:3<383::AID-NEU4>3.3.CO;2-4;
                        Lampetra fluviatilis (River lamprey).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Hyperoartia;
Petromyzontiformes; Petromyzontidae; Lampetra.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptomyces coelicolor.
Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         76.6%; Score 36; DB 2; Length 352; 88.9%; Pred. No. 1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TrEMBLrel. 13, Last sequence update) 01-OCT-2003 (TrEMBLrel. 25, Last annotation update) Secreted endo-1,4-beta-xylanase (EC 3.2.1.8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     450 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-2000 (TrEMBLrel. 13, Created)
   Putative odorant receptor LOR3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         hydrolases).
EMBL; AL939106; CAB61191.1;
HSSP; P26514; 1E0W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 88.9
es 8, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45 TVVGNILTI 53
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                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                             NCBI_TaxID=7748;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=1902;
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Q9RJ91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a licensee agreement (See http://www.isb-sib.ch/announce/or send an email to licenseelsb-sib.ch).
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                                                                                                                                                                                                  MEDLINE=21608551; PubMed=11743194; DOI=10.1126/science.1066803; Goodner B., Hinkle G., Gattung S., Miller N., Blanchard M., Qurollo B., Goldman B.S., Cao Y., Askenazi M., Halling C., Mullin L., Houmiel K., Gordon J., Vaudin M., Iartchouk O., Epp A., Liu F., Houmiel K., Gordon J., Vaudin M., Iartchouk O., Epp A., Liu F., Hanagan C., Allinger M., Doughty D., Scott C., Lappas C., Markelz B., Flanagan C., Crowell C., Gurson J., Lomo C., Sear C., Strub G., Cielo C., Slater S.;
Genome sequence of the plant pathogen and biotechnology agent Agrobacterium tumefaciens CS8 ";
Science 294:2321-2328(2001).
                              Nester E.W.;
"The genome of the natural genetic engineer Agrobacterium tumefaciens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --- FUNCTION: Catalyzes the radical-mediated insertion of two sulfur atoms into an acyl carrier protein (ACP) bound to an octanoyl group to produce a lipoyl group (By similarity).
--- CATALYTIC ACTIVITY: octanoyl-[acyl-carrier protein] + 2 sulfurs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    lipoyl-[acyl-carrier protein].
COFACTOR: Binds 1 4Fe-4S cluster per subunit, and S-adenosyl-L-methionine (AdoMet) used for 5'-deoxyadenosyl radical generation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PATHWAY: Lipoate biosynthesis; sulfur-insertion step. SUBCELLULAR LOCATION: Cytoplasmic (Potential). SIMILARITY: Belongs to the biotin and lipoic acid synthetases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
   Chumley F., Tingey S.V., Tomb J.-F., Gordon M.P., Olson M.V.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pfam; PF04055; Radical_SAM; 1.—
SMART; SM0729; Blp3; 1.
TIGRPAMS; TIGR00511, 1.4
FFe-4S; Complete proteome; Iron; Iron-sulfur; Metal-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1; Length 323;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Iron-sulfur (Potential).
Iron-sulfur (Potential).
Iron-sulfur (Potential).
74B294773BC784D2 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           352 AA
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1; Mismatches
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InterPro; IPR003698; Lippate synth.
InterPro; IPR007197; Radical_SAM.
InterPro; IPR011060; RibP_bind_barrel.
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EMBL, AE008069; AAK87227.1; -.
PIR, AD2753; AD2753.
PIR, B97534; B97534.
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(TrEMBLrel. 10, I
(TrEMBLrel. 24, I
                                                                                                                   Science 294:2317-2323(2001).
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nes 7; Conservative
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91
94
323 AA;
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EMBL; BC015744; AAH15744.2; -. EMBL; BC062330; AAH62330.1; -.
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Matches 7; Conservative
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Q932F0;
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Q8A9J8;
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Q8A9J8
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TISSUEBLOOd, and Pancreas;

TISSUEBLOOd, and Pancreas;

MEDLINE=223825; PubMed=12477932; DOI=10.1073/pnas.242603899;

MEDLINE=223825; PubMed=12477932; DOI=10.1073/pnas.242603899;

A straubberg R.D., Feingold E.A., Grouse L.H., Derge J.G.,

A lackhul S.F., Zeeberg B. Buetow K.H., Schaefer C.F., Bhark N.K.,

A phopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Heish F.,

A plachul S.F., Zeeberg B. W., Bonaldo M.F., Gasavant T.E., Scheetz T.B.,

B prometein M.J., Usdin T.B., Tooshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

B Brownstein M.J., Wedin T.B., Tooshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

B Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Glibbs R.A.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Whiting M., Madan A., Young A.C., Shewley W., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Butterfield Y.S.N., Kzzywinski M.I., Skalaka U., Smailus D.E.,

Butterfield Y.S.N., Kzzywinski M.I., Skalaka U., Smailus D.E.,

Butterfield Y.S.N., Kzzywinski M.I., Shalaka U., Smailus D.E.,

Butterfield Y.S.N., Kzzywinski M.I., Shalaka U., Smailus D.E.,

Butterfield W. Schein J.E., Jones B.J.M., Marra M.A.,

Roderzation and initial analysis of more than 15,000 full-length human
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GO; GO:0004553; F:hydrolase activity, hydrolyzing O-glycosyl . . .; IEA.
GO; GO:0005975; P:carbohydrate metabolism; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
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                                                                                                                  Pfam; PF00553; CBM 2; 1.
Pfam; PF00553; CBM 2; 1.
Pfam; PF005131; Glyco hydro 10; 1.
PRINTS; PR00134; GLHYDRLASE10.
SMART; SM00637; CBD 11; 1.
PR0STIF; PS00591; GLYCOSYL HYDROL F10; 1.
COMPLETE PROTEOME; GLYCOSYL HYDROL F10; 1.
SEQUENCE 450 AA; 47090 MW; E2FF6A36EC29B6AE CRC64;
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                                                                                                                                                                                                                                                                                                                                                       76.6%; Score 36; DB 2; Length 450; 60.0%; Pred. No. 1.3e+02; ive 3; Mismatches 1; Indels
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Alpen B., Guere A.O., Scanlan M.J., Old L.J., Chen Y.-T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 2-143 FROM N.A., AND TISSUE SPECIFICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              014657; QBIZ78;
01-NOV-1997 (Rel. 35, Created)
25-OCT-2004 (Rel. 45, Last sequence update)
ITBA2 protein (ESO-3 protein) (DXS9879E).
Name=ITBA2; Synonyms=ESO3;
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                                             InterPro; IPR001919; Bac celose-bind.
InterPro; IPR008965; Cellul bind.
InterPro; IPR001000; Glyco_hydro_10.
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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STRAIN-VPI 5482 / ATCC 29148;
MEDLINE=22550858; PubMed=12663928; DOI=10.1126/science.1080029;
Xu J., Bjursell M.K., Himrod J., Deng S., Carmichael L.K.,
Chiang H.C., Hooper L.V., Gordon J.I.;
"A genomic view of the human-Bacteroides thetaiotaomicron symbiosis.";
Science 299:2074-2076(2003).
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Bacteria; Bacteroidetes; Bacteroides (class); Bacteroidales;
Bacteroidaceae; Bacteroides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               74.5%; Score 35; DB 1; Length 143; 70.0%; Pred. No. 66;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Complete proteome; Hypothetical protein.
SEQUENCE 144 AA; 15781 MW; AB28935887F6976B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JUN-2003 (TrEMBLrel. 24, Last sequence update) 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
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Pred. No. 66;
3; Mismatches
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MIM; 300060; -.
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Q932F0
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SEQUENCE
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                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN=MUSO / ATCC 700699;
STRAIN=MUSO / ATCC 700699;
MEDLINE=21311952; PubMed=11418146; DOI=10.1016/S0140-6736(00)04403-2;
KULOda M., Ohta T., Uchiyama I., Baba T., Yuzawa H., Kobayashi I.,
Cui L., Oguchi A., Aoki K.-I., Nagai Y., Lian J.-Q., Ito T.,
Kanamori M., Mateumaru H., Maruyama A., Murakami H., Hosoyama A.,
Mizutani-Ui Y., Takahashi N.K., Sawano T., Inoue R.-I., Kaito C.,
Sekimizu K., Hirakawa H., Kuhara S., Goto S., Yabuzaki J.,
Kanehisa M., Yamashita A., Oshima K., Furuya K., Yoshino C., Shiba T.,
Hattori M., Ogasawara N., Hayashi H., Hiramatsu K.;
"Whole genome sequencing of meticillin-resistant Staphylococcus
aureus.";
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PIR; AB9837, A89837.
GO; GO:0016020; C:membranic phosphate transporter activity; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
InterPro; IPR001204; Phos_transporter.
Fransporter.
Complete proteome.
SEQUENCE 335 AA; 35588 MW; 9121CBF8343FD628 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AP003360; BABS6826.1; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0005315; P:inorganic phosphate transporter activity; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
INCEPPO; IRR001204; Phos_transporter.
PF01384; PH04; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Complete proteome.
SEQUENCE 335 AA; 35604 MW; 9135CAB8343FD628 CRC64;
01-JUN-2003 (TrEMBLrel. 24, Last annotation update) Low-affinity inorganic phosphate transporter. OrderedLocusNames=SAV0664;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-JUN-2001 (TrEMBLrel. 17, Last Sequence update) 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
                                                                                       Staphylococcus aureus (strain Mu50 / ATCC 700699).
Bacteria, Firmicutes, Bacillales; Staphylococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Staphylococcus aureus (strain N315).
Bacteria; Firmicutes; Bacillales; Staphylococcus.
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EMBL; AP003360: BARF6927
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Best Local Similarity 70.v.
7; Conservative
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MEDLINE=22040717; PubMed=12044378; DOI=10.1016/S0140-6736(02)08713-5;
Baba T., Takeuchi F., Kuroda M., Yuzawa H., Aoki K.-I., Oguchi A.,
Nagai Y., Imama N., Asano K., Naimi T., Kuroda H., Cui L.,
"Yamamoto K., Hıramatsu K.;
"Genome and virulence determinants of high virulence community-
                                                            Gaps
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Lance 1859:1819-1827(2002).

EMBL, AP004824, EMBLA491.1;
GO, GO:0016020; CHEMBRANE; IEA.
GO; GO:0005315; F:inorganic phosphate transporter activity; IEA.
GO; GO:0006817; P:phosphate transport; IEA.
InterPro; IPR001204; Phos_transporter.
PF01384; PF014; 1.
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Pred. No. 1.5e+02;
1; Mismatches 2; Indels
                 Length 335;
Score 35; DB 2; Length 555
Pred. No. 1.5e+02;
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                                                                                                                                                                                                                                                                                                                                                                                          Staphylococcus aureus (strain MW2).
Bacteria, Firmicutes; Bacillales; Staphylococcus
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70.0%;
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Query Match
Best Local Similarity 70..

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LENGTH: 18 amino acids TYPE: amino acid
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125, App
120, App
120, App
7, Appli
7, Appli
16162, A
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58027, A
42707, A
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Sequence 12, A
Sequence 9, Al
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(Ggn2_6/ptodata/1/iaa/5A_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/5B_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/6A_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/6B_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
(Ggn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
                   GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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US-09-732-210-1076
US-09-270-767-58027
US-09-270-767-42707
US-08-118-270-329
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US-09-134-001C-5428
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US-09-408-036B-12

US-08-791-495-9

US-08-791-495-9

US-09-371-798-8

US-09-371-798-8

US-09-371-798-8

US-09-31-829A-9

US-09-344-040C-125

US-09-344-040C-125

US-09-344-040C-120

US-09-344-040C-120

US-09-341-829A-120

US-08-391-495-7
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                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                               513545 seqs, 74649064 residues
                                                                                                                                                                                   US-09-529-206E-4_COPY_127_136
47
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                                                                                                                            September 11, 2005, 01:30:14
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Maximum Match 100%
Listing first 45 summaries
                                                                                       OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Sequence 9, Application US/09165546D
Sequence 9, Application US/09165546D
Patent NO. 6723832
GENERAL INFORMATION: Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
APPLICANT: Knuth, Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CI
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Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO WHC CLASS I AND WHC CI
USES THEREOF
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APPLICATION NUMBER: 09/062,422
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: 08 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 672832aman D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 47; DB 4; Length 18; 100.0%; Pred. No. 0.011;
                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 10158
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage COMPUTER: 1BM
OPERATING SYSTEM: PC-DOS
SOFTWARE: Word
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                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
STREET: 666 Fifth Avenue
CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FULBRIGHT & JAWORSKI LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-Oct-1998
CLASSIFICATION: 530
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 13, Application US/09165546D Patent No. 6723832 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 666 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (212) 318-3400 INFORMATION FOR SEQ ID NO: 9:
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CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 100.
Marches 10, Conservative
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US-09-165-546D-13
                   RESULT 3
US-09-165-546D-9
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                                                                                                                Gaps
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APPLICANT: Knuth, alexander
TITLE OF INVENTION: Method for Determining Status of A
TITLE OF INVENTION: Cancerous Condition By Determining Antibodies
TITLE OF INVENTION: a Patient Sample
NUMBER OF SEQUENCES: 14
CORRESPONDENCE ADDRESS:
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                                                               100.0%; Score 47; DB 3; Length 18; 100.0%; Pred. No. 0.011;
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                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOCHWARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/359,503
FILING DATE: July 23, 1999
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/165,546
FILING DATE: October 2, 1998
PRIOR APPLICATION NUMBER: 09/062,422
FILING DATE: APACH 17, 1998
PRIOR APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
PRIOR APPLICATION NUMBER: 15, 1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 15, 1997
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/752,182
FILING DATE: OS-OCCEOBER-1996
FILING DATE: 03-OCCEOBER-1996
FILING DATE: OS-OCCEOBER-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Hanson, No. 6251603man D. REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: LUD 5466.1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                      Sequence 13, Application US/09359503
Patent No. 6251603
GENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO: 1
SEQUENCE CHARACTERISTICS:
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Best Local Similarity 100.
Matches 10; Conservative
                                                                                                              Conservative
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COMPUTER READABLE FORM:
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3Y: linear
                                                                                        Best Local Similarity
Matches 10; Conserv
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US-09-359-503-13
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10r010-1
US-09-359-503-9
                                                                    Query Match
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APPLICANT: Three Applicant: APPLICANT: Sahin, Ugur
APPLICANT: Three, Ozlem
APPLICANT: Sahin, Ugur
APPLICANT: Sahin, Ugur
APPLICANT: Pfreundschuh, Michael
TITLE OF INVENTION: Isolated Peptides Which Bind to MHC Class II Molecules and Uses
FILE REFERENCE: LUD 5624
CURRENT APPLICATION NUMBER: US/09/408,036B
CURRENT FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1999-06-25
PRIOR FILING DATE: 1998-10-02
RUDRENT PRIOR PRIOR DATE: 1998-10-02
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/791,495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Leth, Sernard
APPLICANT: Leth, Sophie
APPLICANT: Lucas, Sophie
APPLICANT: Godelaine, Daniele
APPLICANT: Boon-Falleur, Thierry
TITLE OF INVENTION: LL-1 TUMOR SPECIFIC GENES
CORRESPONDENCE: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3: Wolf, Greenfield & Sacks, P.C.
600 Atlantic Avenue
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                                                                      RESULT 6
US-09-408-036B-12
, Sequence 12, Application US/09408036B
, Patent No. 6800730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; Sequence 9, Application US/08791495; Patent No. 5811519; GENERAL INFORMATION:
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CLASSIFICATION: 435
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Van Amsterdam, John R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 40.212
REFERENCE/DOCKET NUMBER: LO
TELECOMONICATION:
TELEPHONE: 617-720-2441
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Best Local Similarity 100.
Matches 10; Conservative
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    7 TVSGNILTIR 16
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; ORGANISM: Homo sapiens
US-09-408-036B-12
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STREET: but
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COUNTRY: US
ZIP: 02210
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Patent No. 6800730
GENERAL INFORMATION:
APPLICANT: Sahin, Ugur
APPLICANT: Sahin, Ugur
APPLICANT: Sahin, Ugur
APPLICANT: Sahin, Ugur
APPLICANT: PfreundaGruhh, Michael
APPLICANT: PfreundaGruhh, Michael
TITLE OF INVENTION: 1501ated Peptides Which Bind to MHC Class II Molecules and Uses 7
FILE REFERENCE: LUD 5624
CURRENT APPLICATION NUMBER: 09/244,040
PRIOR APPLICATION NUMBER: 09/344,040
PRIOR PILING DATE: 1999-06-25
PRIOR APPLICATION NUMBER: 09/165,546
PRIOR PILING DATE: 1998-10-02
NUMBER: OF SEQ ID NOS: 38
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Hanson, No. 6723832man D.
REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
TELECOMMUNION INFORMATION:
TELEPAX: (212) 318-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 47; DB 4; Length 18; ilarity 100.0%; Pred. No. 0.011; Conservative 0; Mismatches 0; Indels
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                                                               ZIP: 10158
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage COMPUTER: 1BM
OPERATING SYSTEM: PC-DOS
SOFTWARE: Word
                                                                                                                                                                                                                                                                                               PRIOR APPLICATION DATA:

APPLICATION NUMBER: 09/062,422
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/725,182
FILING DATE: OCTOBER 3, 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-0ct-1998
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE DESCRIPTION: SEQ ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 18 amino acids
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CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: amino acid
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                                                COUNTRY: USA
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 10; Conserv
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LENGTH: 18
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REFERENCE/DOCKET NUMBER: LUD 5466.3 TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3168
TELEPHONE: (212) 752-5958
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: WordPerfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/751,798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/725,182
FILING DATE: October 3, 1996
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 6525177man D.
REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 25, Application US/09392714A Patent No. 6686147 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/062,422
                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
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Best Local Similarity 100.
Matches 10; Conservative
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STATE: New York
COUNTRY: USA
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LENGTH: 180
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APPLICANT: Chen, Yao-Tseng; Scanlan, Matthew;
APPLICANT: Gure, Ali, Old, Lloyd J.; Jager, Elke;
APPLICANT: Alexander, Xutth; Drijfhout, Jan W.
TITLE OF INVENTION: ISOLATED NUCLEIC ACID MOLECULE
TITLE OF INVENTION: ENCODING CANCER ASSOCIATED ANTIGEN, THE ANTIGEN
TITLE OF INVENTION: ITSELF, AND USES THERROF
                                                                                                                                                          Gaps
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                                                                                                       Query Match
100.0%; Score 47; DB 2; Length 180;
Best Local Similarity 100.0%; Pred. No. 0.15;
Matches 10; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESONDENCE ADDRESS:
ADDRESSEE Filbright & Jaworski, L.L.P.
STREET: 666 Fifth Avenue
CITY: New York City
STATE: New York
COUNTRY: USA
ZIP: 10103
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
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US-09-751-798-8
US-09-751-798-8
; Sequence 8.5251.7
; Patent No. 65251.7
; GENERAL INFORMATION:
; APPLICANT: Stockert, Elisabeth; Jager, Elke;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM
COMPUTER: IBM
COMPUTER: Wordberfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/937,263B
FILING DATE: September 15, 1997
FILING DATE: September 15, 1997
FILING DATE: COCLOBER: 3, 1996
ATTORNEY, ARENT INFORMATION:
NAME: Sinn, Eric, Patent Agent
RECISTRATION NUMBER: UND 5466.1
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION SEQ ID NO: 8:
SUCCESSION OF SEG ID NO: 8:
SUCCESSION OF SEG ID NO: 8:
                                                                                                                                                                                                                                                                                                                                 US-08-937-263B-8
; Sequence 8, Application US/08937263B
; Patent No. 6274145
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Best Local Similarity 100.
Matches 10; Conservative
                TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127 TVSGNILTIR 136
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amino acid
GY: linear
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                                                ; MOLECULE TY
US-08-791-495-9
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APPLICANT: Chen, Yao-tseng; Scanlan, Matthew;
APPLICANT: Knuth, Alexander; Old, Lloyd J.
TITLE OF INVENTION: Antibodies Which Bind to NY-ESO-1 Cancer
TITLE OF INVENTION: Associated Proteins, Uses Thereof,
TITLE OF INVENTION: Truncated Forms of NY-ESO-1, and HLA
TITLE OF INVENTION: Binding Peptides Derived Therefrom
NUMBER OF SEQUENCES:
ADDRESSES: ADDRESS:
ADDRESSEE: Fulbright & Jaworski, L.L.P.
STREET: 666 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 47; DB 4; Length 180;
100.0%; Pred. No. 0.15;
ive 0; Mismatches 0; Indels
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APPLICANT: Scandar, Ali O.
APPLICANT: Williamson, Barbara
APPLICANT: Chen, Yao-Tseng
TITLE OF INVENTION: Cancer Associated Antigens and Uses;
TITLE OF INVENTION: Therefor
FILE REFERENCE: L0461/7062
CURRENT FILING DATE: 1999-09-09
EARLIER APPLICATION NUMBER: PCT/US98/14679
EARLIER APPLICATION NUMBER: PCT/US98/14679
SAPLING DATE: 1998-07-15
NUMBER OF SEQ ID NOS: 30
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIF: 10103
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
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APPLICANT: Stevanovic, Stefan
TITLE OF INVENTION: Method for Determining Presence of Cancer In a Sample By Determin
TITLE OF INVENTION: Expression of an SSX Gene, Peptides Derived From Said SSX Gene
TITLE OF INVENTION: Gene, and Uses Thereof
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hea 0; Indels
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                                                                                                                  APPLICANT: Godelaine, Daniele .
APPLICANT: Godelaine, Daniele .
AITLE BEPERCHT: BOON-FAILBUL, THIERLY
AITLE OF INVENTION: LAGE-1 TUMOR ASSOCIATED NUCLEIC ACIDS
FILE REFERENCE: L0461/706
CURRENT APPLICATION NUMBER: US/09/341,829A
CURRENT FILING DATE: 1999-10-18
PRIOR APPLICATION NUMBER: US 08/791,495
NUMBER OF SEQ ID NOS: 14
SOFTWARE: FREESEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Scanlan, Matthew J.
APPLICANT: Stanlan, Matthew J.
APPLICANT: Stockert, Elisabeth
APPLICANT: Stockert, Elisabeth
APPLICANT: Chen, Yao-Teeng
TITLE OF INVENTION: Colon Cancer Antigen Panel
TITLE OF INVENTION: Colon Cancer Antigen Panel
TITLE OF INVENTION: Colon Cancer Antigen Panel
CURRENT APPLICATION NUMBER: US/09/849,602
CURRENT FILING DATE: 2001-05-04
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PatentIn version 3.0
SEQ ID NO 30
LENGTH: 180
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 30, Application US/09849602
; Patent No. 6794501
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APPLICANT: Sahin, Ugur.
APPLICANT: Pfreundschuh, Michael
APPLICANT: Rameneee, Hans Georg
                                                     APPLICANT: Leth,, Bernard
APPLICANT: Lucas, Sophie
APPLICANT: De Smet, Charles
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ORGANISM: Homo sapiens
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US-09-849-602-30
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Matches 10; Conserv
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APPLICANT:
APPLICANT:
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Best Local S.
Matches 10
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Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
USES THEREOF
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REGISTRATION NUMBER: 30,946
REFERENCE/DOCKET WINDER: LUD 2166.4 CIP (09807811)
TELECOMMUNICATION INFORMATION:
TELEPHONE: (212) 318-3000
                                                                      DB 4; Length 180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 47; DB 4; Length 180; 100.0%; Pred. No. 0.15; tive 0; Mismatches 0; Indels
                                                                 Query Match 100.0%; Score 47; DB 4; Length 18
Best Local Similarity 100.0%; Pred. No. 0.15;
Matches 10; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 10158
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOFTWARE: Word
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-OCt-1998
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 09/062,422
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/725,182
FILING DATE: October 3, 1996
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US-09-165-546D-15
                                                                                                                                                                                                                                                                                                                           ; Sequence 15, Application US/09165546D
; Patent No. 6723832
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 666 Fifth Avenue CITY: New York City
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TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (212) 318-3400
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Best Local Similarity 100.
Matches 10; Conservative
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                                                                                                                                                                                             127 TVSGNILTIR 136
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; ORGANISM: Homo sapiens
US-09-392-714-25
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US-09-341-829A-9
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Sequence 125, 4024-125

Fatent No. 667350

GENERAL INFORMATION:

APPLICANT: Tureci, Ozlem

APPLICANT: Sahin, Ugur

APPLICANT: Pfreundschuh, Michael

TILLE OF INVENTION: Tumor Associated Peptide and Uses Thereof

TILLE OF INVENTION: Tumor Associated Peptide and Uses Thereof

TILLE OF INVENTION TUMORER: US/09/833,039A

CURRENT APPLICATION NUMBER: US 09/409,455

PRIOR FILING DATE: 1299-06-26

PRIOR FILING DATE: 1999-06-26

SPRIOR FILING DATE: 1999-06-26

SOFTWARE: PatentIn version 3.2

SOFTWARE: PatentIn version 3.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89.4%; Score 42; DB 4; Length 9; 100.0%; Pred. No. 4.1e+05; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                      Query Match 89.4%; Score 42; DB 4; Length 9; Best Local Similarity 100.0%; Pred. No. 4.1e+05; Matches 9; Conservative 0; Mismatches 0; Indels
FILE REFERENCE: LUD 5556.1

CURRENT APPLICATION NUMBER: US/09/344,040C

CURRENT FILING DATE: 1999-06-25

PRIOR PELLING DATE: 1998-06-26

PRIOR FILING DATE: 1998-06-26

PRIOR PILING DATE: 1998-06-26

PRIOR PILING DATE: 1997-05-05

NUMBER OF SEQ ID NOS: 132

LENGTH: 9
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Best Local Similarity 100.
Matches 9; Conservative
                                                                                                                                                                                                                                         TYPE: PRT
GRGANISM: Homo sapiens
US-09-344-040C-125
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US-09-833-039A-125
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US-09-833-039A-125
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Search completed: September 11, 2005, 01:45:16 Job time : 4.66667 secs

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1 TVSGNILTIR 10
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                                                                                                                                                               September 11, 2005, 01:43:05; Search time 13.5238 Seconds (without alignments) 291.657 Million cell updates/sec
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Sequence 15, P
Sequence 16, P
Sequence 9, Ap
Sequence 13, P
Sequence 8, Ap
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Sequence 6
Sequence 3
Sequence 3
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1: \cgn2_6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*
2: \cgn2_6/ptodata/1/pubpaa/PCT_MBW_PUB_pep:*
3: \cgn2_6/ptodata/1/pubpaa/US06_NBW_PUB_pep:*
4: \cgn2_6/ptodata/1/pubpaa/US06_NBW_PUB_pep:*
5: \cgn2_6/ptodata/1/pubpaa/US06_PUBCOMB.pep:*
6: \cgn2_6/ptodata/1/pubpaa/US07_NBW_PUB.pep:*
7: \cgn2_6/ptodata/1/pubpaa/US08_NBW_PUB.pep:*
8: \cgn2_6/ptodata/1/pubpaa/US08_NBW_PUB.pep:*
9: \cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*
11: \cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
11: \cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
12: \cgn2_6/ptodata/1/pubpaa/US09_PUBCOMB.pep:*
13: \cgn2_6/ptodata/1/pubpaa/US108_PUBCOMB.pep:*
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19: \cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
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21: \cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
22: \cgn2_6/ptodata/1/pubpaa/US10B_PUBCOMB.pep:*
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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US-10-182-506A-15
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US-10-851-884-8
US-10-182-506A-65
US-10-182-506A-65
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US-10-182-506A-35
US-10-182-506A-34
US-10-182-506A-34
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1777461 seqs, 394431504 residues
                                                                                                                                                                                                                                                                          US-09-529-206E-4_COPY_127_136
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Maximum Match 100%
Listing first 45 summaries
                                                                                                              OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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No.
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Sequence 17, App
Sequence 17, Appl
Sequence 17, Appl
quence 20, Apr
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Sequence 9, Appli
Sequence 1270, Ap
Sequence 7, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 74, Appli
Sequence 74, Appli
Sequence 74, Appli
                                                                      Sequence 8, Appli
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Sequence 125, App
Sequence 125, App
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Sequence 202, App
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Sequence 8, At
Sequence 71, 7
Sequence 3, At
                                                                                                                   Sequence 74, P
Sequence 386,
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US-10-023-182-8

US-10-205-655-71

US-10-205-065-3

US-10-117-937-74

US-10-295-077-386

US-10-295-077-386

US-10-295-077-386

US-10-117-937-139

US-10-118-832-139

US-10-837-217-11

US-10-837-217-11

US-10-877-373-9

US-10-877-373-9

US-10-877-373-9

US-10-877-373-9

US-10-877-373-8

US-10-871-708-1270

US-10-877-373-8

US-10-1182-5664-3

US-10-1182-5664-3
US-10-491-891-83
US-10-182-506A-7
US-10-182-506A-6
US-10-296-734-1414
US-10-77-053-17
US-10-77-053-17
US-10-77-053-20
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US-10-296-734-1454
US-09-833-039-125
US-10-177-277-125
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#### ALIGNMENTS

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Sequence 17, Application US/10182506A
Fublication No. US20050136402A1
Sequence 17, Application US/10182506A
Fublication No. US20050136402A1
SERERAL INPORMATION:
APPLICANT: Wang, R.F.
APPLICANT: Zeng, G
TITLE OF INVENTION: NOVEL MHC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER
TITLE OF INVENTION: ANTIGNY, NY ESO-1
TITLE OF INVENTION: ANTIGNY, NY ESO-1
FILS REFREENCE: 217955
CURRENT APPLICATION NUMBER: US/10/182,506A
CURRENT FILING DATE: 2000-10-28
FRIOR APPLICATION NUMBER: 60/179,004
FRIOR PILING DATE: 2000-01-28
FRIOR PILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 80
SOFTWARE PACENTIN VERSION 3.1
SEQ ID NO 17
LENGTH: 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%; Score 47; DB 18; Length 14; Best Local Similarity 100.0%; Pred. No. 0.026; Matches 10; Conservative 0; Mismatches 0; Indel8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Artificial Sequence
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Gaps

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GENERAL INFORMETTION:
APPLICANT: Knuth, Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
APPLICANT: Knuth, Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
Gure, Ali, Old, Lloyd, Ritter, Gerd
TITLE OF INVENTION: ISOLATED PERTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
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; Sequence 13, Application US/10751088
; Publication No. US20040158044A1
; GENERAL INFORMATION:
; APPLICANT: Knuth, Alexader; Jager, Elke; Chen, Yao, Scanlan, Matt;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage COMPUTER: IBM OPERATION SYSTEM: PC-DOS SOFTWARE: Word
  Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/165,546D
FILING DATE: 02-0ct-1998
APPLICATION NUMBER: 09/062,422
FILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/725,182
                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSE: FULBRIGHT & JAWORSKI LLP
STREET: 66 Fifth Avenue
CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/10/751,088 FILING DATE: 02-Jan-2004 CLASSIFICATION: 530
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE DESCRIPTION: SEQ ID NO: 9:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE: October 3, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: Hanson, Norman D.
REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (212) 318-3000
                                                                                                                                                                                                                  Sequence 9, Application US/10751088 Publication No. US20040158044A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: USA
ZIP: 10158
COMPUTER READABLE FORM:
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Best Local Similarity 100.
Matches 10; Conservative
Conservative
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US-10-751-088-9
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  Matches
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TITLE OF INVENTION: NOVEL MHC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER
TITLE OF INVENTION: ANTIGEN, NY ESO-1
FILE REFERENCE: 21/955.
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: PCT/US01/02765
PRIOR FILING DATE: 2000-10-26
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 80

SOFTWARE: PatentIn version 3.1
                                                                                                                                                                                                             APPLICANT: Wang, R-F
APPLICANT: Rosenberg, S A
APPLICANT: Rosenberg, S A
APPLICANT: Rosenberg, S A
APPLICANT: Rosenberg, S A
APPLICANT: APPLICANT: APPLICANT: CELL BPITOPES FROM THE CANCER
TITLE OF INVENTION: ANTIGEN, NY ESO-1
FILE REFERENCE: 217952.
CURRENT APPLICATION NUMBER: US/10/182,506A
CURRENT FILING DATE: 2002-10-28
PRIOR APPLICATION NUMBER: PCT/US01/02765
PRIOR APPLICATION NUMBER: 60/179,004
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-01-28
PRIOR FILING DATE: 2000-09-29
NUMBER OF SEQ ID NOS: 80
SOFTWARE: PatentIn version 3.1
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                                                                                                                                            Sequence 15, Application US/10182506A Publication No. US20050136402A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 16, Application US/10182506A Publication No. US20050136402A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM: Artificial Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; OTHER INFORMATION: Synthetic US-10-182-506A-15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 TVSGNILTIR 10
4 TVSGNILTIR 13
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Best Local Similarity
                                                                                                                     US-10-182-506A-15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQ ID NO 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
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Matches
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GENERAL INFORMATION:

GENERAL Stain, Ugur

APPLICANT: Pfreundschuh, Michael

FILE REFERENCE: LUD 5624

CURRENT APPLICATION NUMBER: US/10/851,884

CURRENT FILING DATE: 1999-09-29

FRIOR PRILING DATE: 1999-09-29

FRIOR APPLICATION NUMBER: 09/344,040

FRIOR APPLICATION NUMBER: 09/165,546

FRIOR FILING DATE: 1998-10-02

FRIOR FILING DATE: 1998-10-02

FRIOR FILING DATE: 1998-10-02

FRIOR FILING DATE: 1998-10-02

FRIOR FILING DATE: 1998-10-02
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Sequence 65, Application US/10182506A

Sequence 65, Application World US20050136402A1

GENERAL INFORMATION:

APPLICANT: Wang, R-F

APPLICANT: Rosenberg, S A

APPLICANT: Rosenberg, S A

TITLE OF INVENTION: ANTIGEN, NY ESO-1

FILE REFERENCE: 217955

CURRENT APPLICATION NUMBER: US/10/182,506A

CURRENT PILING DATE: 2002-10-28

PRIOR FILING DATE: 2001-01-26

PRIOR FILING DATE: 2000-01-28

PRIOR FILING DATE: 2000-01-28

PRIOR FILING DATE: 2000-09-29

NUMBER OF SEQ ID NOS: 80

SOFTWARE PRECED IN OFFICE O
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                                                                                                                                                                                                    Length 18;
                                                                                                                                                                                                                                                                               0; Indels
                                                                                                                                                                                                    Score 47; DB 16;
Pred. No. 0.035;
                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                           100.0%;
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Best Local Similarity 100.
Matches 10; Conservative
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                                                                   ; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-851-884-8
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US-10-851-884-12
SEQ ID NO 8
LENGTH: 18
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LENGTH: 18
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Sequence 8, Application US/10851884

Sequence 8, Application No. US20040214284A1

GENERAL INFORMATION:

APPLICANT: Tureci, Ozlem

APPLICANT: Tureci, Ozlem

APPLICANT: Tureci, Ozlem

TITLE OF INVENTION: Isolated Peptides Which Bind to MHC Class II Molecules and Uses T

TITLE OF INVENTION: Isolated Peptides Which Bind to MHC Class II Molecules and Uses T

FILE REFERENCE: LUD 5624

CURRENT PAPLICATION NUMBER: US/09/408,036

PRIOR PILING DATE: 1999-06-25

PRIOR FILING DATE: 1999-06-25

PRIOR FILING DATE: 1999-06-25

PRIOR FILING DATE: 1999-06-25

NUMBER OF SEQ ID NOS: 38
                                TITLE OF INVENTION: ISOLATED PEPTIDES CORRESPONDING TO AMINO ACID
SEQUENCES OF NY-ESO-1, WHICH BIND TO MHC CLASS I AND MHC CL
USES THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: LUD 2166.4 CIP (09807811)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%; Score 47; DB 16; Length 1 Best Local Similarity 100.0%; Pred. No. 0.035; Matches 10; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette, 3.5 inch, 144 kb storage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/09/165,546D
APPLICATION NUMBER: US/09/165,546D
APPLICATION NUMBER: 09/062,422
RILING DATE: April 17, 1998
APPLICATION NUMBER: 08/937,263
FILING DATE: September 15, 1997
APPLICATION NUMBER: US 08/725,182
FILING DATE: October 3, 1996
   Gure, Ali, Old, Lloyd, Ritter,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM
OPERATING SYSTEM: PC-DOS
SOFTWARE: WOAG
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/10/751,088
FILING DATE: 02-03n-2004
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: FULBRIGHT & JAWORSKI LLP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
SEQUENCE DESCRIPTION: SEQ ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: Hanson, Norman D. REGISTRATION NUMBER: 30,946
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (212) 318-3000
                                                                                                                                                                                                                                 STREET: 666 Fifth Avenue
CITY: New York City
STATE: New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: (212) 318-3400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 18 amino acids
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SEQUENCE CHARACTERISTICS:
                                                                                                                                       NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                ZIP: 10158
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Sequence 38, Application US/10182506A
; Sequence 38, Application US/10182506A
; Publication No. US20050136402A1
; GENERAL INFORMATION:
; APPLICANT: Wang, R-F
; APPLICANT: Zeng, G
; TITLE OF INVENTION: NOVEL MHC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER
; TITLE OF INVENTION: NOVEL MHC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER
; TITLE OF INVENTION: NOVEL MC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER
; TITLE OF INVENTION: NOVEL MC CLASS II RESTRICTED T CELL EPITOPES
; TITLE OF INVENTION: NOVEL MC CLASS II RESTRICTED T CELL EPITOPES
; FILE REFERENCE: 217955
; CURRENT APPLICATION NUMBER: 00/179,004
; PRIOR PILING DATE: 2000-01-26
; PRIOR APPLICATION NUMBER: 60/179,004
; PRIOR PILING DATE: 2000-09-29
; NUMBER OF SEQ ID NOS: 80
; SOFTWARE: PatentIn version 3.1
; SEQ ID NO 38
; LENGTH: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 83, Application US/10491891

| Sequence 83, Application World US/2050059107A1
| Publication No. US20050059107A1
| GENERAL INFORMATION:
| APPLICANT: MAILLERE, BERNARD
| APPLICANT: GENERAL WORLD US ELECTING HIA-DP4 LIGANDS AND THE APPLICANT: GENERAL US/10/491, 891
| TITLE OF INVENTION: WHERE US/10/491, 891
| CURRENT APPLICATION NUMBER: US/10/491, 891
| CURRENT APPLICATION NUMBER: PCT/FR02/03555
| PRIOR PILING DATE: 2002-10-17
| PRIOR APPLICATION NUMBER: PR01/13352
| PRIOR PILING DATE: 2001-10-17
| WUMBER OF SEQ ID NOS: 129
| SOFTWARE: Patentin version 3.2
| SEQ ID NO 83
| LENGTH: 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: Synthetic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100 Matches 10; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: Zhang, Yi
APPLICANT: Zhang, Yi
APPLICANT: Boon, Thierry
APPLICANT: Use of Thierry
APPLICANT: Van der Bruggen, Pierre
APPLICANT: Traversari, Catra
TITLE OF INVENTION: Isolated Peptides Which Bind to HLA-Cw6 Molecules And Uses There
FILE REPERENCE: LUD-5771
CURRENT APPLICATION NUMBER: US/10/164,121A
CURRENT FILING DATE: 2002-08-26
NUMBER OF SEQ ID NOS: 36
SEQ ID NO 35
LENGTH: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Bilsborough, Janine
APPLICANT: Schultz, Erwin
APPLICANT: Schultz, Erwin
APPLICANT: Panichelli, Christophe
APPLICANT: Panichelli, Christophe
APPLICANT: Van der Buuggen, Pierre
APPLICANT: Van der Bruggen, Pierre
APPLICANT: Won der Bruggen, Pierre
APPLICANT: Won der Bruggen, Pierre
APPLICANT: Won der Bruggen, Pierre
TITLE OF INVENTION: Isolated Peptides Which Bind to HLA-BIB Molecules And Uses Therec
CURRENT APPLICATION WIMBER: US/10/164,078A
CURRENT APPLICATION WIMBER: US/10/164,078A
UNDMBER OF SEQ ID NOS: 35
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                                                                                                               Score 47; DB 18; Length 18; Pred. No. 0.035;
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                                                                                                                                                                                                                                                                                                                                                                           Sequence 35, Application US/10164121A Publication No. US20030228308A1 GENERAL INFORMATION:
                                                                                                                 Query Match
Best Local Similarity 100.0%;
Matches 10; Conservative 0
ORGANISM: Artificial Sequence
                    ; FEATURE:
; OTHER INFORMATION: Synthetic
US-10-182-506A-65
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Best Local Similarity 100.
Matches 10; Conservative
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Best Local Similarity 100.
Matches 10; Conservative
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ORGANISM: H. sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: H. sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-10-164-078A-34
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Sequence 1414, Application US/10296734

Sequence 1414, Application US/10296734

Publication No. US20040054137A1

GENERAL INFORMATION:

APPLICANT: Thompson, Scott A

TITLE OF INVENTION: Synthetic molecules and uses therefor

FILE REFERENCE: Savine

CURRENT APPLICATION NUMBER: US/10/296,734

CURRENT PILICATION NUMBER: US/10/296,734

CURRENT PILICATION NUMBER: 2003-08-04

PRIOR PLICATION NUMBER: AU PQ7761/00

PRIOR PLICATION NUMBER: AU PQ7761/00

PRIOR PLICATION OF SEQ 1507

SOFTWARE: PatentIn version 3.2

LENGTH: 30

LENGTH: 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 47; DB 15; Length 30; 100.0%; Pred. No. 0.062; ative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Search completed: September 11, 2005, 02:07:11
Job time : 14.5238 secs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CTHER INFORMATION: NYSOla segment 9 US-10-296-734-1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.
Best Local Similarity 100.
Matches 10; Conservative
                                                   17 TVSGNILTIR 26
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                    1 TVSGNILTIR 10
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                                                                                                                   RESULT 15
US-10-296-734-1414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURE:
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                                                                            SUBJECTANT: WALLY, TO APPLICANT: WARDY, R.P.

APPLICANT: Rosenberg, S A

APPLICANT: Rosenberg, S A

APPLICANT: Rosenberg, S A

APPLICANT: Rosenberg, G

TITLE OF INVENTION: NOVEL MHC CLASS II RESTRICTED T CELL EPITOPES FROM THE CANCER

TITLE OF INVENTION: ANTIGEN, NY ESO-1

FILE REPERENCE: 217955

CURRENT PILING DATE: 2002-10-28

PRIOR FILING DATE: 2000-01-28

PRIOR FILING DATE: 2000-09-29

NUMBER OF SEQ ID NOS: 80

SOFTWARE: PatentIn version 3.1

SEQ ID NO 6

LENGTH: 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 6, Application US/10182506A Publication No. US20050136402A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; OTHER INFORMATION: Synthetic US-10-182-506A-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; OTHER INFORMATION: Synthetic US-10-182-506A-6
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LENGTH: 25
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